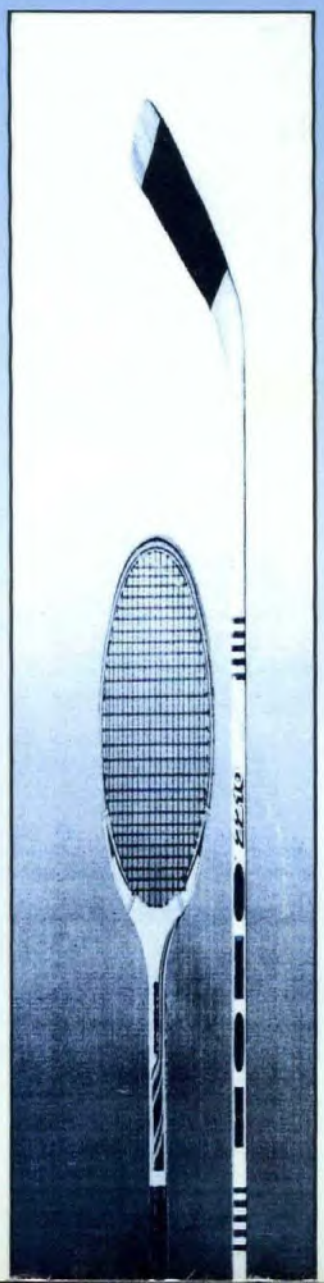
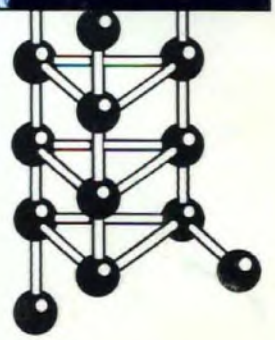
ADVANCED INDUSTRIAL MATERIALS

Advanced Industrial Materials

1988 Canadian Sourcebook





Ministry of State
Science and Technology Canada

Ministère d'État
Sciences et Technologie Canada

Canada

Advanced Industrial Materials

1988 Canadian Sourcebook

Prepared for: The Interdepartmental Working Group on Advanced Industrial Materials

Prepared by: The Ministry of State for Science and Technology
Advanced Industrial Materials

Preface

This sourcebook is the result of a survey of Canadian companies, universities, government laboratories and provincial research organizations. It is intended as an information resource for those interested in the fields of advanced industrial materials and advanced materials processing technologies. It contains summary information on the research and development activities in each organization.

As this study neared completion, it became apparent from the nature of the responses that the classification system we have used does not provide an adequate representation of the trends in materials science and engineering or the organization of the relevant R & D. In our enthusiasm to present a tidy and ordered picture of the Canadian effort, we may have overlooked the fact that much materials R & D does not fit into a definable materials category. Materials research and data are not readily classifiable, and in fact the field is so dynamic that classification systems cannot keep pace with developments. Examples of research that doesn't easily fit are certain aspects of analysis and testing, molecular design, basic research on atomic structure, and research on certain applications. Indeed, in developing materials strategies and R & D plans, it is important to recognize the limitations of taxonomy and the blurring of traditional distinctions between materials at all stages of the innovation cycle from science to markets. Nonetheless, the categories used are still convenient for classifying the interests of many companies. With the expectation that future editions of the Sourcebook will improve on the classification system and strive for greater comprehensiveness in the process, we have presented the information under the headings in which it was gathered.

It will be apparent that a number of companies and other organizations that are known to be active in advanced materials are not listed herein. There are a number of reasons for this, not the least of which is that participation was voluntary; some of the companies who were surveyed simply declined to be listed.

The sourcebook is based on information collected in the summer of 1987. Over 300 organizations were contacted and we are very grateful to all who submitted data. Despite this extensive sample, it is possible that some organizations were not surveyed. We offer our apologies to any such organizations and encourage them to forward information to:

Advanced Industrial Materials
Ministry of State (Science and Technology)
240 Sparks Street, 8th Floor West
Ottawa, Ontario
K1A 1A1

We invite your comments on the contents of this Sourcebook, on its value as a reference tool, and your suggestions on how future editions might be improved.

Every effort has been made to ensure the accuracy of the information. However, for the most accurate and up to date information we suggest you contact the organizations directly.

While this sourcebook was originally conceived as an information resource for the assessment of Canadian capabilities for public policy purposes, it is expected it will be a useful reference for all parties involved or interested in this field. We anticipate that there will be considerable interest in the information contained in this directory. While this first sourcebook of Canadian AIM/AMPT was produced by MOSST, we hope that future editions will be prepared in the private sector so as to more closely serve the specific needs of this emerging technology.

Graham Taylor
Ministry of State
(Science and Technology)

ANALYSIS

There are 98 companies, 34 universities, six government organizations, and four provincial research organizations listed in this 1987 source book. To be included, a company or institution had to be involved in research or development or manufacturing of advanced industrial materials (AIM) or advanced material processing technology (AMPT) in the year 1987. Over 300 Canadian companies and institutions were initially contacted in connection with this survey.

For the purpose of the source book, advanced industrial materials are being defined as being new or improved materials possessing physical or chemical properties which make them superior, either technically or economically, to conventional materials. Examples are: piezoelectric ceramics, composites, engineering plastics, conductive polymers, bio-ceramics, composites, engineering plastics, super alloys, semiconductors, etc. Advanced materials processing technologies are described as those processes which modify the properties of materials such as surface treatment and ion implantation. Specific examples are hot isostatic pressing, reaction injection molding, rapid solidification technology and chemical vapour deposition.

Data Summary

The following information provides a rough picture of the AIM/AMPT field in Canada. Because participation in the study was voluntary, a number of important players in the field are not represented. In addition, a number of companies reported their general research interests, but declined to give data on expenditures, sales and human resources.

AIM/AMPT was divided into five fields of application which are listed and described in Table I. The table also shows the number of companies and institutions involved in each field of application.

COMPANIES

The total reported AIM/AMPT expenditures were over $30 million in 1987. However, this total was based only upon 43 of the 98 companies (44%) reporting AIM/AMPT expenditures. The largest contributors to this figure were: Atomic Energy of Canada Ltd. ($11 million); Tecrad Inc. ($2 million); Optotek Ltd. ($2 million); KB Electronics Ltd. ($1.5 million); Bristol Aerospace ($1.5 million); and Sherritt Gordon Mines Ltd ($1.5 million). It must be recognized that data are not available for a number of leading performers.

Fifty-nine companies (60%) provided data on human resources, reporting 424 AIM/AMPT research personnel.

Forty-five companies (46%) were involved in more than one field of application.

UNIVERSITIES

The total spending on AIM/AMPT research activities was over $19 million per year. The largest contributors to this figure were: Ecole Polytechnique ($2.2 million); Concordia ($1.9 million); Sherbrooke ($1.7 million); McMaster ($1.5 million); and Toronto ($1.4 million).

About 1015 researchers were involved in AIM/AMPT research. Twenty-four universities (71%) were involved in more than one field. The geographical distribution of universities involved in AIM/AMPT research is in Table II.

GOVERNMENT ORGANIZATIONS

Over $26 million was spent by government organizations on AIM/AMPT research. The major contributor was the National Research Council with $14.6 million. The concentration of research expenditures was in Ceramics ($10 million) and in Metal research ($8.5 million).

Government organizations reported 306 researchers that were active in AIM/AMPT research.

PROVINCIAL RESEARCH ORGANIZATIONS

The total reported AIM/AMPT research expenditures were over $3 million of which $2 million was spent by B.C. Research. The concentration of research expenditures was in ceramics which accounted for 83% of the total AIM/AMPT research expenditures. Three organizations (60%) were involved in this field of application. Provincial Research Organizations reported 40 AIM/AMPT research personnel.

AIM/AMPT research and development activity is distributed across Canada with particular concentrations of activity in Ontario and Quebec (see Table II).

TABLE I

AIM/AMPT Fields of Applications and Number of Companies and Institutions Involved in Each Field

FIELD	EXAMPLE	COMPANIES	UNIVERSITIES	GOV. ORG.
Ceramics	Biological, chemical, magnetic, electrical, optical	27	20	4
Electronics/ Electrical	Fibre optics, liquid crystals, semiconductors	22	22	5
Glass	Coatings, composites, seals	8	13	1
Metals	Alloys, amorphous metals, powder metallurgy	46	22	5
Plastics/ Polymers	Composites, piezoelectric	50	23	5

TABLE II

Location of Activities carried out by Companies and Universities Listed in the 1987 Source Book

LOCATION	No. OF COMPANIES	No. OF UNIVERSITIES
East	1	7
Quebec	19	7
Ontario	61	11
Prairies	6	6
British Columbia	11	3

COMPANIES BY FIELD OF APPLICATION

Ceramics

Alcan International Ltd.
Algonquin Mining
Almax Industries
Anatek Microcircuits Inc.
Atomic Energy of Canada
Baskatong Quartz Inc.
Bell Northern Research
Canada Wire and Cable
Cominco Ltd.
Electrofuel Mnf. Co.
F.T. Gerson
Fiberglas Canada
General Comminution
Hamilton Porcelains Ltd.
Hammond Mnf. Comp. Ltd.
Hydro Quebec
Indusman Div.
Industrial Ceramics Ltd.
Infrared Photographic Ltd.
International Radiochemiccal Centre Inc.
Lakeside Electronics Ltd.
London Lab Ltd.
Metal 7 Inc.
Ontario Hydro
Scintrex Ltd.
Tecrad Inc.
Vortek Industries Ltd.

Electronics/Electrical

Alcan International
Algonquin Mining
Anatek Microcircuits Inc.
B.C. Hydro
Cominco Ltd.
Graphic Controls Can. Ltd.
Hammond Mnf. Comp. Ltd.
Huron Technologies Inc.
Lakeside Electronics Ltd.
London Lab. Ltd.
Moli Energy Ltd.
Noranda Inc.
Ontario Hydro
Optotek Limited
Sherritt Gordon Mines Ltd.
Tektron Equipment

Electronics/Electrical (cont'd)	Vortek Industries Walbar of Canada Inc. Hydro Quebec G.I. Russel Co. Ltd. Bell Northern Research Lumonics
Glass	General Comminution Inc. Inrad Ind. Resarch and Development Ltd. London Lab Ltd. Spaulding Fibre of Canada Ltd. Technical Pultrusion Inc. Warnock Hersey Fiberglas Canada Inc. Bell Northern Research
Metals	Ad Tech Plastic Systems Inc. Alcan International Ltd. Atomic Energy of Canada Ltd. B.C. Hydro Bell Helicopter Textron Bristol Aerospace Ltd. CP Rail Canadair Inc. Canadian Aircraft Products Ltd. Chromasko Cominco Ltd. Delta Engineering FRC Composites Ltd. Genaire Limited F.T. Gerson Hard Materials Research Inc. Hardy BBT Ltd. Himont Canada Inc. Huron Technologies Inc. Indusman Div. Industrial Formulators Infrared Photographic Inrad Ind. Research and Development Ltd. International Radiochemical Centre Inc. Jan Tesar - Exco Eng. Kennametal Inc., Marco Div. London Lab. Ltd. Moli Energy Ltd. MPB Technologies Inc. Noranda Inc. Optotek Limited Sherritt Gordon Mines Ltd.

Metals (cont'd)	Sinteris Inc.
	Stelco Inc.
	TPK International Inc.
	Tecrad Inc.
	Tennyson, Hanson, Mabson and Uffen Association Ltd.
	Vortek Industries
	Walbar of Canada Inc.
	Wornock Hersey
	Weld-Process International Inc.
	Zenair Ltd.
	Metal 7 Inc.
	Hydro Quebec
	Bombardier Inc.
	Bell Northern Research
Plastics	Ad Tech Plastic Systems Inc.
	A. Shulman Canada Ltd.
	Alcan International Ltd.
	Armtex Fibres Inc.
	B.C. Hydro
	Bell Helicopter Textron
	Bristol Aerospace Ltd.
	Canadair Inc.
	Canadian Aircraft Products Ltd.
	Du Pont Canada
	Exel Limited
	FRC Composites
	F.T. Gerson Ltd.
	Fiberplast Products
	Fleet Industries
	Forintek Canada Corp
	Future Floatations Inc.
	Graphic Controls Can. Ltd.
	Hercules Canada Inc.
	Himont Canada Inc.
	ICAM Technologies Corp.
	Industrial Formulators
	International Tools
	International Radiochemical Centre Inc.
	Madison Chemical Ind. Inc.
	Maple Leaf Plastics Corp.
	Morval - Durafoam Ltd.
	MPB Technologies Inc.
	Multiplex Chemicals Ltd.
	Onex Packaging Inc.
	PBI/Plastibeton Inc.
	Polysar Limited
	Raylo Chemicals

Plastics (cont'd)	Reichold Limited
	Sherritt Gordon Mines Ltd.
	Spaulding Fibro of Can. Ltd.
	Sternson Ltd.
	Technical Pultrusion Inc.
	Tectron Equipment Corp.
	Tennyson, Hamson, Mabson & Uffen Association
	Uthane Research Ltd.
	Warnock Hersey
	Zenair Ltd.
	Zenon Environmental Inc.
	Metal 7 Inc.
	Bombardier Inc.
	Fiberglas Canada Inc.
	Bell Northern Research
	Pratt & Whitney Canada
	Canada Wire and Cable

FEDERAL GOVERNMENT ORGANIZATION BY FIELD OF APPLICATION

Ceramics	Transport Canada
	National Defence
	Energy, Mines and Resources
	National Research Council
Electronics/Electrical	Transport Canada
Electrical	Communications
	Department of National Defence
	Energy, Mines and Resources
	National Research Council
Glass	National Research Council
Metals	Transport Canada
	National Defence
	Communications
	Energy, Mines and Resources
	National Research Council
Plastics	Canadian Forestry Service
	Transport Canada
	Communications
	Department of National Defence
	National Research Council

UNIVERSITIES BY FIELD OF APPLICATION

Ceramics	Alberta
	British Columbia
	Brock
	Carleton
	Concordia
	Dalhousie
	Laval
	McGill
	McMaster
	Memorial
	Ottawa
	Queens
	Sherbrooke
	Simon Fraser
	Toronto
	Trent
	Waterloo
	Windsor
	York
	Ecole Polytechnique
Electronics/Electrical	Alberta
	Brandon
	British Columbia
	Concordia
	Dalhousie
	Laval
	Ecole Polytechique
	McGill
	McMaster
	Manitoba
	College Militaire
	Quebec
	Saskatchewan
	Simon Fraser
	Nova Scotia
	Toronto
	Waterloo
	Western Ontario
	Windsor
	Winnipeg
	York
	Queens

UNIVERSITIES BY FIELD OF APPLICATION (cont'd)

Glass	Acadia
	Carleton
	Concordia
	Laval
	McMaster
	Manitoba
	Ottawa
	Queens
	Sherbrooke
	Simon Fraser
	Toronto
	Waterloo
	Ecole Polytechnique
Metals	Alberta
	British Columbia
	Calgary
	Carleton
	Concordia
	Dalhousie
	Laval
	McGill
	McMaster
	New Brunswick
	Quebec
	Queens
	St-Francis Xavier
	Sherbrooke
	Simon Fraser
	Toronto
	Waterloo
	Windsor
	York
	Ecole Polytechnique
	Ottawa
Plastics	Alberta
	British Columbia
	Calgary
	Carleton
	Condordia
	Laval
	McGill
	McMaster
	Moncton
	College Militaire
	Memorial
	Quebec
	Queens
	Sherbrooke
	Simon Fraser
	Toronto

Victoria
Waterloo
Western Ontario
Windsor
York
Ecole Polytechnique
Ottawa

PROVINCIAL RESEARCH ORGANIZATIONS BY FIELD OF APPLICATION

Ceramics	New Brunswick CRIQ
Electronics	--
Glass	--
Metals	Manitoba New Brunswick CRIQ
Plastics	CRIQ British Columbia

COMPANIES

NAME: *A. Schulman Canada Ltd.*

HEAD OFFICE:

400 South Edgeware Road
St. Thomas, Ontario
N5P 3Z5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *8*
TOTAL R&D EXPENDITURES ($): *250 000*

TEL: *(519) 633-3451*
TELEX:
PRESIDENT: *C.J. Brown*
YEAR ESTABLISHED: *1973*
NO. OF EMPLOYEES: *70*
ANNUAL SALES ($): *30 000 000*
PARENT COMPANY: *A. Schulman Inc. (U.S.A.)*

PRODUCTS AND SERVICES:

- *Engineered plastic compounds*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Engineering Plastics*
- *Flame retardant plastics*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

1485 Lauzon Road
Windsor, Ontario
N8S 3N2

RESEARCH FACILITIES: *AD Tech Plastic Systems Inc.*
U.S.A.

TEL: *(517) 543-5710*
TELEX:
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 945-3631*
TELEX:
PRESIDENT: *Don Geiger*
YEAR ESTABLISHED: *1981*
NO. OF EMPLOYEES: *25*
ANNUAL SALES ($): *3 000 000*
PARENT COMPANY: *AD Tech Plastics Systems Inc.*

PRODUCTS AND SERVICES:
- *Custom formulator for epoxy & polyester, urethane & adhesives*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Mass cast tooling for prototype in metal stamping industries: a new material designed specifically to cast-to-shape metals and epoxies with an analysis of their potential to reduce costs and cut lead times.*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Alcan International Limited - R&D Division*

HEAD OFFICE:

1188 Sherbrooke Street W.
Montréal (Québec)
H3A 3G2

RESEARCH FACILITIES:
Arvida R&D Centre
Kingston R&D Centre

TEL: *(418) 548-1121 - (613) 549-4500*
TELEX: *05-25236 Alcan Mtl*
TOTAL RESEARCH STAFF: *528*
TOTAL R&D EXPENDITURES ($): *41 200 000*

TEL: *(514) 848-8000*
TELEX: *05-25236*
PRESIDENT: *I. Suchoversky*
YEAR ESTABLISHED: *1980*
NO. OF EMPLOYEES: *528*
ANNUAL SALES ($):
PARENT COMPANY: *Alcan Aluminum Limited*

PRODUCTS AND SERVICES:
- *R&D and technical assistance for Alcan Aluminum Limited and its subsidiaries world-wide*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Ceramics: biological, electrical, mechanical, thermal*
- *Electrical: semiconductors, batteries*
- *Metals: alloys, composites, powder metallurgy*
- *Polymers: composites, conductive composites*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Algonquin Mining Company Limited*

HEAD OFFICE:

RR5
Belleville, Ontario
K8N 4Z5

RESEARCH FACILITIES: *Same*

TEL:
TELEX: *06-62320*
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *40 000*

TEL: *(613) 962-5749*
TELEX:
PRESIDENT: *Royce Hamer*
YEAR ESTABLISHED: *1986*
NO. OF EMPLOYEES: *4*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *High quality quartz for semi-conductor and fusion industries*
- *Quartz crystal*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Marketing of high purity quartz for industry and medicine*
- *High purity semi-conductor materials*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

61 Needham Street
Lindsay, Ontario
K9V 4Z7

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(705) 324-5100*
TELEX: *06-962907*
PRESIDENT: *R&D Director: K. El-Assal*
YEAR ESTABLISHED: *1963*
NO. OF EMPLOYEES: *85*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Piezoelectric ceramics for hydrophones, sonars, sonobuoys*
- *High frequency dielectric ceramics for resonators, filters, etc.*
- *B" alumina ionic conductors*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of pressure and temperature stable PZT ceramic for high power application*
- *Development of B" Al_2O_3 industrial processing techniques*
- *Development of up to 10 GH dielectric ceramic*
- *Development of SiN ceramic processing technique*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *12*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *Queens University*
- *National Research Council/IMRI*
- *Ontario Research Foundation*
- *McGill University*

NAME: *Anatek Microcircuits Inc.*

HEAD OFFICE:

240 Brooksbank Avenue
North Vancouver, British Columbia
V7J 2C1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 980-7061*
TELEX: *045-4247*
PRESIDENT: *Scott C. Lewis*
YEAR ESTABLISHED: *1983*
NO. OF EMPLOYEES: *35*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Manufacture and design of thick film hybrid microcircuits.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Electrical ceramics*
- *Hybrid microcircuits*
- *Ruthenium oxide and related thick film resistor materials*
- *Polymer thick film materials*
- *Screen printable superconducting ceramics*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Armtex Fibres Inc.*

HEAD OFFICE:

1675, boul. Industrial
Magog (Québec)
J1X 5B3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(819) 843-4236*
TELEX: *05-836152*
PRESIDENT: *Bernard St-Aubin*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *35*
ANNUAL SALES ($): *4 500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:

- *Industrial fabrics: Made of glass fibre, of Aramid fibre (Kevlar), of carbon fibre, of polyester, or in combination of two or more of these products*
- *High performance laminates for industrial and recreational applications*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of a flexible copper clad laminate for industrial application*
- *Development of composites for use in the construction industry*

AIM/AMPT RELATED EXPENDITURES ($): *300 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *July 1988*

COLLABORATIONS/AFFILIATIONS:

NAME: *Atomic Energy of Canada Limited Research Company*

HEAD OFFICE:

275 Slater Street
Ottawa, Ontario
K1A 1E5

RESEARCH FACILITIES:
Pinawa, Manitoba ROE 1LO
Chalk River, Ontario KOJ 1JO

TEL: *(204) 753-2311 - (614) 584-3311*
TELEX: *07-57553 - 053-34555*
TOTAL RESEARCH STAFF: *1000*
TOTAL R&D EXPENDITURES ($): *220 000 000*

TEL: *(613) 236-6444*
TELEX: *053-4867*
PRESIDENT: *S.R. Hatcher*
YEAR ESTABLISHED: *1952*
NO. OF EMPLOYEES: *3140*
ANNUAL SALES ($):
PARENT COMPANY: *Atomic Energy of Canada Ltd. Corporate Office*

PRODUCTS AND SERVICES:
- *Research, development and demonstration of nuclear technologies and their commercialization, together with spin-off of these technologies to non-nuclear applications*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Zirconium alloy CANDU fuel channel development*
- *UO nuclear fuel development*
- *Li ceramic fusion fuel development*
- *General ceramic development*
- *Catalyst development for humid/wet environments*
- *Development of permeable supports for chemically active materials*
- *Radiation hardened instrumentation*
- *Fluid seal component/product development*
- *Metal coating seal development*
- *Radiation improved composites*
- *Superconducting ceramics*
- *Non destructive testing development*

AIM/AMPT RELATED EXPENDITURES ($): *11 000 000*
NO. OF RESEARCHERS INVOLVED: *80*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

970 Burrard Street
Vancouver, British Columbia
V6Z 1Y3

RESEARCH FACILITIES:
12388 88th Avenue
Surrey, British Columbia
V3W 7R7

TEL: *(604) 590-7400*
TELEX: *04-54395*
TOTAL RESEARCH STAFF: *125*
TOTAL R&D EXPENDITURES ($): *8 500 000*

TEL: *(604) 663-2212*
TELEX: *04-54395*
PRESIDENT: *G.B. McGavin*
YEAR ESTABLISHED: *1963*
NO. OF EMPLOYEES: *6508*
ANNUAL SALES ($): *2 094 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Electric and gas utility*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Development of fibre optic current transducer*
- *Development of fibre optic voltage transducer*
- *Development assistance & evaluation of commercial composite polymer insulators*
- *Development of low cost conductive coatings for laboratory testing*
- *Stress corrosion cracking of non-ceramic insulators*
- *Sulphide stress cracking of compressed natural gas cylinders*
- *Overlay materials for the cavitation protection of hydraulic turbines and spillways*
- *Welding process development to minimize distortion of hydraulic turbines*
- *Development of a pressure relief device for aluminum composite compressed natural gas cylinders*
- *Development and evaluation of commercial composite polymer insulators*
- *Modal analysis techniques to determine the strength of power and telephone wood poles*
- *Investigation of properties of cross-linked polyethylene distribution cable*

AIM/AMPT RELATED EXPENDITURES ($): *1 255 000*
NO. OF RESEARCHERS INVOLVED: *21*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:
- *AMCA International*
- *Canadian Electrical Association*
- *Canadian Gas Association*
- *Univerisity of British Columbia*

NAME: *B.H. Levelton and Associates Ltd.*

HEAD OFFICE:

8805 Osler Street
Vancouver, British Columbia
V6P 4G1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 266-1411*
TELEX: *04-55581*
PRESIDENT: *B.H. Levelton*
YEAR ESTABLISHED: *1966*
NO. OF EMPLOYEES: *56*
ANNUAL SALES ($): *3 500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Consulting engineering*
- *Product development on contract basis*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of ultra-high strength concrete for arctic use*
- *Development of shotcrete set accelerators*
- *Development of vapour-phase catalyzed reactions for methylation of phenol to cresols*

AIM/AMPT RELATED EXPENDITURES ($): *250 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *- Chatterton Petrochimical Corp.*

NAME: *Baskatong Quartz Inc.*

HEAD OFFICE:

C.P. 337, Succ. N.D.G.
Montréal (Québec)
H4A 3P6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 482-6357*
TELEX:
PRESIDENT: *Howard Hogan*
YEAR ESTABLISHED: *1962*
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *High purity quartz*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Upgrading of quartz*
- *Manufactured forms of silica*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *Centre de recherches minerales*
- *McGill University*
- *IREQ (Hydro Québec)*

NAME: *Bell Helicopter Textron (Division of Textron Can.)* 12

HEAD OFFICE:

C.P. 5005
St. Therese (Québec)
J7E 4K7

RESEARCH FACILITIES: *Bell Helicopter Plant Mirabel*

TEL: *(514) 437-3400*
TELEX: *05-25827*
TOTAL RESEARCH STAFF: *40*
TOTAL R&D EXPENDITURES ($): *1 000 000*

TEL: *(514) 437-3400*
TELEX: *05-25827*
PRESIDENT: *Jim Schwalbe*
YEAR ESTABLISHED: *1984*
NO. OF EMPLOYEES: *375*
ANNUAL SALES ($): *55 000 000*
PARENT COMPANY: *Textron Inc.*

PRODUCTS AND SERVICES:
- *Design, manufacture, sales, and product support of helicopters*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Damage tolerance characteristics of composite structures*
- *Bolted joints in advanced composites*
- *Design and development of manufacturing processes for components using advanced composites on helicopters*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *10*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *Bell Helicopter Textron Inc, Fort Worth, USA*
- *IMRI (NRC), Boucherville*
- *Ecole Polytechnique de Montréal*
- *Concordia University*

NAME: *Bell Northern Research*

HEAD OFFICE:
3500 Carling Avenue
Ottawa, Ontario
K2H 8E9

RESEARCH FACILITIES:
Ottawa, Montreal, Toronto, Paulo Alto (CA), Raleigh (NC), Maidenhead (UK), Richardson (Texas)

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(613) 726 2211*
TELEX: *0533175*
PRESIDENT: *Gedes Sakus*
YEAR ESTABLISHED: *1970*
NO. OF EMPLOYEES: *4 000*
ANNUAL SALES ($): *non-profit*
PARENT COMPANY: *Bell Canada Enterprises*

PRODUCTS AND SERVICES: *- Telecommunications R & D*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- Too numerous to list here

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *1 000*
EXPECTED COMPLETION DATE: *2375*

COLLABORATIONS/AFFILIATIONS: *numerous*

HEAD OFFICE:

Division Motoneige
Valcourt (Québec)
J0E 2L0

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 532-2211*
TELEX: *05-852575*
PRESIDENT: *Gerard Parent*
YEAR ESTABLISHED: *1942*
NO. OF EMPLOYEES: *1400*
ANNUAL SALES ($):
PARENT COMPANY: *Bombardier Inc.*

PRODUCTS AND SERVICES:
- *Ski-doo snowmobiles*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Various standard applications in snowmobile design*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Bristol Aerospace Limited*

HEAD OFFICE:

Box 874, 660 Berry Street
Winnipeg, Manitoba
R3C 2S4

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *17*
TOTAL R&D EXPENDITURES ($): *1 600 000*

TEL: *(204) 775-8331*
TELEX: *07-57774*
PRESIDENT: *J.A. Bowden*
YEAR ESTABLISHED: *1930*
NO. OF EMPLOYEES: *1400*
ANNUAL SALES ($): *100 000 000*
PARENT COMPANY: *Rolls Royce Industries Canada Inc.*

PRODUCTS AND SERVICES:
- *Aircraft repair and overhaul*
- *Aerostructures manufacture*
- *Aeroengine component manufacture*
- *Space science*
- *Research rockets, defence rockets and missiles*
- *Nuclear reactor components*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Superelastic forming of titanium alloys*
- *Ablative materials studies*
- *Composite materials manufacturing technology*
- *Reinforced plastic design and development*
- *Aircraft composite structures design and development*
- *Filament winding of composite rocket motor cases*

AIM/AMPT RELATED EXPENDITURES ($): *1 500 000*
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *Note: No dedicated R&D staff. Engineer and Technologist staff totals approximately 145 from which 17 man years are budgeted for R&D activities.*

NAME: *CP Rail*

HEAD OFFICE:
Windsor Station
C.P. 6042, Succ. "A"
Montréal (Québec)
H3C 3E4

RESEARCH FACILITIES:
Room 155/c-34
Windsor Station
Montréal (Québec) H3C 3E4

TEL: *(514) 395-6779*
TELEX:
TOTAL RESEARCH STAFF: *23*
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 395-5151*
TELEX:
PRESIDENT: *R. Allison*
YEAR ESTABLISHED:
NO. OF EMPLOYEES: *29 000*
ANNUAL SALES ($):
PARENT COMPANY: *Canadian Pacific Ltd.*

PRODUCTS AND SERVICES:
- *Transportation*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Rail evaluation*
- *Rail metallurgy*
- *Laser-hardened engine liners*
- *Improved AUSTENITIC-MANGANESE steels for railways applications*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *REA*
- *CRA*
- *AAR*

NAME: *Canada Wire and Cable Limited*

HEAD OFFICE:
250 Ferrand Drive
Don Mills, Ontario
M3C 3J4

RESEARCH FACILITIES: *Corporate Labs*
22 Commercial Road
Toronto, Ontario
M4G 1Z4

TEL: *(416) 421-0440*
TELEX: *065-24120*
TOTAL RESEARCH STAFF: *20*
TOTAL R&D EXPENDITURES ($): *1 150 000*

TEL: *(416) 424-5000*
TELEX: *065-24120*
PRESIDENT: *P. Green*
YEAR ESTABLISHED: *1911*
NO. OF EMPLOYEES: *2500*
ANNUAL SALES ($):
PARENT COMPANY: *Noranda*

PRODUCTS AND SERVICES:
- *Electrical wire and cable*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Development with engineering plastics, conductive polymeric compounds, dielectric polymers*
- *Development work due to commence shortly on suprconductive ceramic application*

AIM/AMPT RELATED EXPENDITURES ($): *500 000*
NO. OF RESEARCHERS INVOLVED: *7*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *Noranda Research Centre*
Canstar
others

NAME: *Canadair Inc.*

HEAD OFFICE:

C.P. 6087, Succ. "A"
Montréal (Québec)
H3C 3G9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *400*
TOTAL R&D EXPENDITURES ($): *51 000 000*

TEL: *(514) 744-1511*
TELEX: *05-826747*
PRESIDENT: *Donald Lowe*
YEAR ESTABLISHED: *1944*
NO. OF EMPLOYEES: *5450*
ANNUAL SALES ($): *577 000 000*
PARENT COMPANY: *Bombardier Inc.*

PRODUCTS AND SERVICES:
- *Aircraft, airborne surveillance systems and aerospace components*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of composite materials technology applied to aircraft structures*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *20*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS: - *Collaboration with NRC, DND and Sherbrooke University on specific projects*

NAME: *Canadian Aircraft Products Ltd.*

HEAD OFFICE:

2611 Viscount Way
Richmond, British Columbia
V6V 1M9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 278-9821*
TELEX: *043-55526*
PRESIDENT: *D.C. Cameron*
YEAR ESTABLISHED:
NO. OF EMPLOYEES: *160*
ANNUAL SALES ($): *15 000 000*
PARENT COMPANY: *Avcorp Industries*

PRODUCTS AND SERVICES:
- *Metal and composite aerospace structures*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Characterization of SPECTRA-900 fibre as a structural composite -- Determination of mechanical properties*
- *Use of composite materials in radome structures*
- *Flamability characteristics of SPECTRA-900 fibres*
- *Manufacture of thin-wall graphite prepreg cylindrical structures*
- *Selection of materials, vibration and stress analysis for cyclotron components*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:
- *TRIUMF*
- *Allied Signal Inc.*

NAME: *Chromasco, A Division of Timminco Limited*

HEAD OFFICE:
130 Adelaide Street West
Suite 2900
Toronto, Ontario
M5H 3P5

RESEARCH FACILITIES:
Haley, Ontario
K0J 1Y0

TEL: *(613) 432-3621*
TELEX: *05-33180*
TOTAL RESEARCH STAFF: *6*
TOTAL R&D EXPENDITURES ($): *693 000*

TEL: *(416) 364-5171*
TELEX: *06-218677*
PRESIDENT: *G.H. Blouin*
YEAR ESTABLISHED: *1936*
NO. OF EMPLOYEES: *603*
ANNUAL SALES ($): *76 532 000*
PARENT COMPANY: *Timminco Limited*

PRODUCTS AND SERVICES:
- *High purity magnesium metal and alloy*
- *Calcium metal and alloy*
- *Strontium metal and alloy*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Production of metal nitrides*
- *Application for Strontium in high pressure AL & Mg die casting*
- *Production of Lithium metal*
- *Production of Neodymium metal alloy*
- *Continuous casting reactive metals*
- *Calcination of Strontium carbonate*
- *High yield die casting of reactive metals*

AIM/AMPT RELATED EXPENDITURES ($): *200 000*
NO. OF RESEARCHERS INVOLVED: *4*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:
- *University of Toronto*
- *McGill University*

NAME: *Ciment St-Laurent Inc.*

HEAD OFFICE:

1945, boul. Graham
Ville Mont-Royal (Québec)
H3R 1H1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($): *210 000*

TEL: *(514) 340-1881*
TELEX: *05-825804*
PRESIDENT: *W.F. Penny*
YEAR ESTABLISHED: *1951*
NO. OF EMPLOYEES: *3200*
ANNUAL SALES ($): *601 000 000*
PARENT COMPANY: *Holderbank Financiere Claris S.A.*

PRODUCTS AND SERVICES:
- *Cement, concrete, aggregates*
- *Concrete products*
- *Construction services*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Cilicate cement*
- *Blast furnace slag cement*

AIM/AMPT RELATED EXPENDITURES ($): *115 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *1987*

COLLABORATIONS/AFFILIATIONS:
- *Demix Betons et Aggregats*
- *Dufferin Concrete Products*
- *Custom Concrete*
- *Beton Quebec (Groupe)*

NAME: *Cominco Ltd*

HEAD OFFICE:
Cominco Electronic Materials
East 15128 Euclid Avenue
Spokane, Washington
99216

RESEARCH FACILITIES: *Cominco Electronic Materials Group*
Trail, British Columbia
V1R 4L8

TEL: *(604) 364-4751*
TELEX: *041-4428*
TOTAL RESEARCH STAFF: *25*
TOTAL R&D EXPENDITURES ($): *2 000 000*

TEL: *(509) 924-2200*
TELEX: *32-6492*
PRESIDENT: *H.E. Hirsch*
YEAR ESTABLISHED: *1982*
NO. OF EMPLOYEES: *250*
ANNUAL SALES ($): *50 000 000*
PARENT COMPANY: *Cominco Ltd.*

PRODUCTS AND SERVICES:
- *High purity metals*
- *Evaporaton charges*
- *Semiconductor wafers*
- *Sputtering targets*
- *Wire and ribbon*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *GaAs crystal growth*
- *CdHgTe liquid-phase epitaxy*
- *Microgravity Ge float-zone refining*
- *Ga, As, B_2O_3 purification*
- *Photodetector materials*

AIM/AMPT RELATED EXPENDITURES ($): *2 000 000*
NO. OF RESEARCHERS INVOLVED: *8*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Delta Engineering Inc.*

HEAD OFFICE:
505 Consumers Road
Suite 905
Willowdale, Ontario
M2J 4V8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 494-0606*
TELEX: *06-986685*
PRESIDENT: *George T. Halmos*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *3*
ANNUAL SALES ($): *500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Metal forming and fabricating: technology, product, equipment, tooling*
- *Roll and brake forming processes*
- *CAD/CAM of forming rolls*
- *Developing manufacturing technology for steel, Al, Zr and other metals*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Curving thin wall square tubing for automotive application*
- *Manufacturing technology (roll forming, brake forming and deep drawing) of zirconium sheets for nuclear power plants*
- *Improving physical characteristics of studs used in building industry and sign posts*
- *Develop CAD/CAM software for roll design*
- *Developing special forming process of metal components used in electronic shielding*

AIM/AMPT RELATED EXPENDITURES ($): *150 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Domtar Inc.*

HEAD OFFICE:
P.O. Box 7210
395 de Maisonneuve Blvd. West
Montreal, Quebec
H3C 3M1

RESEARCH FACILITIES: *Research Centre*
C.P. 300
Sortie 40, Route Transcanadienne ouest
Senneville (Québec) H9X 3L7

TEL: *(514) 457-6810*
TELEX: *05560625*
TOTAL RESEARCH STAFF: *150*
TOTAL R&D EXPENDITURES ($): *6 000 000*

TEL: *(514) 848-5400*
TELEX: *05560625*
PRESIDENT: *James H. Smith*
YEAR ESTABLISHED: *1903*
NO. OF EMPLOYEES: *14 282*
ANNUAL SALES ($): *2 500 000 000*
PARENT COMPANY: *Domtar Inc.*

PRODUCTS AND SERVICES:
- *Pulp, paper, treated wood, construction materials*
- *Salt, chemicals*
- *Gypsum, arborite*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Inorganic fibres*
- *Pillared clays*

AIM/AMPT RELATED EXPENDITURES ($): *300 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Du Pont Canada Inc.*

HEAD OFFICE:

6600 Turner Valley Road
Mississauga, Ontario
L5M 2H3

RESEARCH FACILITIES:
P.O. Box 5000, Front Road
Kingston, Ontario
K7L 5A5

TEL: *(613) 544-6400*
TELEX: *0663218*
TOTAL RESEARCH STAFF: *165*
TOTAL R&D EXPENDITURES ($): *15 000 000*

TEL:
TELEX:
PRESIDENT:
YEAR ESTABLISHED:
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Engineering resins*
- *Composites*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *E.I. du Pont de Nemours and Company (USA)*
- *Several University contracts*

NAME: *Electrofuel Mnf. Co.*

HEAD OFFICE:

9 Hanna Avenue
Toronto, Ontario

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *20*
TOTAL R&D EXPENDITURES ($): *1 000 000*

TEL: *(416) 535-1114*
TELEX:
PRESIDENT: *Sankar Das Gupta*
YEAR ESTABLISHED: *1983*
NO. OF EMPLOYEES: *<100*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Manufacturer of advanced ceramic materials including BN fibres, solids, powder, AlN powder and substrates, ceramic/ceramic composites, wear resistant materials, cutting tool materials, TiB_2 based materials, ZTC/ZTA, SiC, Si_3N_4, etc.*
- *Manufacturer of high temperature furnaces*
- *Research and development of ceramics and high energy density battery*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *BN fibres, powder and solids*
- *AlN powder and solids*
- *Tough ceramics*
- *Ceramic composites and processing techniques*
- *High Energy density battery*

AIM/AMPT RELATED EXPENDITURES ($): *1 000 000*
NO. OF RESEARCHERS INVOLVED: *20*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *NRC, NAE, EMR*
- *University of Toronto, McMaster & McGill*
- *Argonne National Laboratory, etc.*

NAME: *Exel Limited*

HEAD OFFICE:
427 Pido Road
P.O. Box 537
Peterborough, Ontario
K9J 6Z6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *200 000*

TEL: *(705) 748-9141*
TELEX: *06-962913*
PRESIDENT: *Juha Kokko*
YEAR ESTABLISHED: *1980*
NO. OF EMPLOYEES: *55*
ANNUAL SALES ($): *5 000 000*
PARENT COMPANY: *Exel - Group Ltd. (Finland)*

PRODUCTS AND SERVICES:
- *Reinforced plastic products for sporting goods industry*
- *Industrial tubing and profiles*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *New applications for graphite fibres in sporting goods*
- *Development of continuous manufacturing methods for advanced composites*

AIM/AMPT RELATED EXPENDITURES ($): *200 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *Parent company is working in various areas of composite research. Their R&D budget is ten times larger.*

NAME: *F.T. Gerson Ltd.*

HEAD OFFICE:

55 Queen Street East, Suite #409
Toronto, Ontario
M5C 1R6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 364-2457*
TELEX:
PRESIDENT: *F.T. Gerson*
YEAR ESTABLISHED: *1960*
NO. OF EMPLOYEES: *3*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Consulting engineers*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Modification of SMC by IPN*
- *Microfibre reinforcing media*
- *Metal/ceramic composites*
- *Polymer/ceramic composites*
- *EMI/RFI shielding composites*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *FRC Composites Ltd.*

HEAD OFFICE:

1993 Leslie Street
Toronto, Ontario
M3B 2M3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *125 000*

TEL: *(416) 449-1405*
TELEX: *069-66685*
PRESIDENT: *Ergo Karuks*
YEAR ESTABLISHED: *1975*
NO. OF EMPLOYEES: *9*
ANNUAL SALES ($): *1 200 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Polymer modified fiber reinforced and unreinforced cementitious materials*
- *Tape/crete for repair, surfacing and waterproofing concrete*
- *Marine coating for corrosion protection of steel surfaces*
- *Pipe line coatings*
- *Asbestos encapsulants*
- *Sealers*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Jute fiber reinforced cementitious materials*

- *Projectile resistant steel fiber reinforced concrete (SFRC) structures*

AIM/AMPT RELATED EXPENDITURES ($): *120 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *1989*

COLLABORATIONS/AFFILIATIONS:

NAME: *Fiberglas Canada Inc.*

HEAD OFFICE:
4100 Younge Street
Willowdale, Ontario
M2P 2B6

TEL: *(416) 733-1600*
TELEX: *065 24309*
PRESIDENT: *Mr. F.W. Henkelman*
YEAR ESTABLISHED: *1939*
NO. OF EMPLOYEES: *2527*
ANNUAL SALES ($): *393 000 000*
PARENT COMPANY:

RESEARCH FACILITIES: *Fiberglas Canada Inc.*
Technical Centre
P.O. Box 3049
Sarnia, Ontario, N7T 7X4

TEL: *(519) 336-5670*
TELEX: *064 76295*
TOTAL RESEARCH STAFF: *97*
TOTAL R&D EXPENDITURES ($): *10 000 000*

PRODUCTS AND SERVICES:
- *Insulation*
- *Glass textile, reinforcements and chemicals*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Advanced ceramics research*
- *Inorganic research*
- *Chemical process development*

AIM/AMPT RELATED EXPENDITURES ($): *40 000*
NO. OF RESEARCHERS INVOLVED: *1*
EXPECTED COMPLETION DATE: *1989*

COLLABORATIONS/AFFILIATIONS: *Selected industrial and university collaborations*

NAME: *Fiberplast Products*

HEAD OFFICE:

6888 Burlington Avenue
Burnaby, British Columbia

RESEARCH FACILITIES:
McCarthy Road
Box 64
Winfield, British Columbia VOH 2CO

TEL: *(604) 766-2988*
TELEX:
TOTAL RESEARCH STAFF: *1.5*
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 438-1341*
TELEX:
PRESIDENT: *Tom Murphy*
YEAR ESTABLISHED: *1969*
NO. OF EMPLOYEES: *50*
ANNUAL SALES ($): *50 000 000*
PARENT COMPANY: *G.W.I.*

PRODUCTS AND SERVICES:
- *Manufacture of unsaturated polyester resins/gelcoats*
- *Distributor to FRP Industry*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Composites: binders (polyesters, hybrid urethanes, phenolics)*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Fibre Armtex Inc.*

HEAD OFFICE:

1675, boul. Industriel
Magog (Québec)
J1X 5B3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(819) 843-4236*
TELEX: *05-836152*
PRESIDENT: *Bernard E. St-Aubin*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *35*
ANNUAL SALES ($): *4 500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Industrial laminated fabric made of fibreglass and/or aramid (Kevlar) fibre and/or carbon fibre, some of which is impregnated with a thermosetting matrix, usually made of epoxy or polyester*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of a laminate for printed circuits boards*

- *Development of copper-plated laminates (epoxy/fibreglass or polyester/ fibreglass) which will be manufactured in a continuous process. These laminates will be used in the manufacture of printed circuit boards or dielectric insulating sheets*

AIM/AMPT RELATED EXPENDITURES ($): *300 000 +*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *July, 87*

COLLABORATIONS/AFFILIATIONS:

NAME: *Fleet Industries, A Fleet Aerospace Company*

HEAD OFFICE:

P.O. Box 400
Fort Erie, Ontario
L2A 5N3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *250 000*

TEL: *(416) 871-2100*
TELEX: *061-5165*
PRESIDENT: *J.S. Butyniec*
YEAR ESTABLISHED: *1930*
NO. OF EMPLOYEES: *800*
ANNUAL SALES ($): *60 000 000*
PARENT COMPANY: *Fleet Aerospace Corporation*

PRODUCTS AND SERVICES:
- *Aircraft mechanical components*
- *Satellite and radar mechanical components*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Cost effective use of advanced thermoplastics (PIIK, PPS, etc.) for aircraft components*

AIM/AMPT RELATED EXPENDITURES ($): *150 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:

NAME: *Forintek Canada Corp., Eastern Division*

HEAD OFFICE:

6620 N.W. Marine Drive
Vancouver, British Columbia
V6T 1X2

RESEARCH FACILITIES:
800 Montreal Road
Ottawa, Ontario
K1G 3Z5

TEL: *(613) 744-0963*
TELEX: *053-3606*
TOTAL RESEARCH STAFF: *200*
TOTAL R&D EXPENDITURES ($): *12 700 000*

TEL: *(604) 224-3221*
TELEX: *04-508552*
PRESIDENT: *Tony French*
YEAR ESTABLISHED:
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Research and development for Canadian wood products industry*
- *Technical information service*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Laminated wood veneer materials: laminated veneer lumber for eastern plywood industry*
- *Stabilized wood fibre materials: stabilized waferboard, stabilized MDF & particleboard*
- *Wood/synthetic fibre composites: pallet deck development*

AIM/AMPT RELATED EXPENDITURES ($): *750 000*
NO. OF RESEARCHERS INVOLVED: *7*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:

NAME: *Future Floatations Inc.*

HEAD OFFICE:

1-211 Schoolhouse Street
Coquitlam, British Columbia
V3K 4X9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *12 000*

TEL: *(604) 524-4276*
TELEX: *04-351186*
PRESIDENT: *A.J. Emmerson*
YEAR ESTABLISHED: *1985*
NO. OF EMPLOYEES: *4*
ANNUAL SALES ($): *480 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Syntactic foam*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Manufacture of syntactic foam floatation material:*
  - *insulative*
  - *thermal moulding applications*
  - *FRP "sandwich" materials*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS: *- SF & C Technologies (St-Laurent, Quebec)*

NAME: *G.I. Russell Co. Ltd.*

HEAD OFFICE:
Interprovincial Corrosion Control Co. Ltd.
1144-1150 Plans Road East
Burlington, Ontario

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($): *56 000*

TEL: *(416) 634-5509*
TELEX: *061-8251*
PRESIDENT: *G.I. Russel*
YEAR ESTABLISHED: *1956*
NO. OF EMPLOYEES: *12*
ANNUAL SALES ($): *Up to $1 M*
PARENT COMPANY:

PRODUCTS AND SERVICES: *- Electrical grounding protection devices*
- Rustrol polarization cells
- Cathodic polarization systems

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Optimizing cathodic protection of atmospherically exposed steel reinforced concrete structures*
- *Preventing corrosion by securing apolarized potential*
- *Higher purity materials and electrolytes increased by field practices to purify the polarized bound surface layer*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Genaire Limited*

HEAD OFFICE:
Niagara District Airport
P.O. Box 84
St. Catharines, Ontario
L2R 6R4

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 684-1165*
TELEX: *061 5145*
PRESIDENT: *Gerry R. Woolf*
YEAR ESTABLISHED: *1951*
NO. OF EMPLOYEES: *70*
ANNUAL SALES ($): *4 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Repair and overhaul of miscellaneous airframe and ground support components, radomes and bladder-type fuel cells*

- *Manufacture of Airglide, Flilite and "Twin Otter" skis*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Improvement of solid core sandwich structures (Genaire Limited has developed a new type of honeycomb core made from aluminum alloy which replaces balsa, foams etc.)*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *General Comminution Inc.*

HEAD OFFICE:

P.O. Box 70, Station "P"
Toronto, Ontario
M5S 2S6

RESEARCH FACILITIES:
1 Spadina Crescent
Suite #205
Toronto, Ontario M5S 2J5

TEL: *(416) 591-5494*
TELEX: *06-966685*
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($): *300 000*

TEL: *(416) 591-5494*
TELEX: *06-966685*
PRESIDENT: *Ergo Karuks*
YEAR ESTABLISHED: *1975*
NO. OF EMPLOYEES: *8*
ANNUAL SALES ($): *400 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Design and manufacture of the SZEGO mill (a novel planetary ring-roller mill)*
- *Production and classification of fine particles*
- *Coal and Mineral ore grinding and cleaning*
- *Custom grinding and evaluation*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Test programs on glass, mica*
- *Rubber and ceramic grinding*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS: - *University of Toronto*

NAME: *Graphic Controls Canada Limited*

HEAD OFFICE:
P.O. Bag 5500
215 Herbert Street
Gananoque, Ontario
K7G 2Y7

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *90 400*

TEL: *(613) 382-4733*
TELEX: *066-3216*
PRESIDENT: *V.J. Pope*
YEAR ESTABLISHED: *1943*
NO. OF EMPLOYEES: *186*
ANNUAL SALES ($): *24 400 000*
PARENT COMPANY: *Graphic Controls Corporation*

PRODUCTS AND SERVICES:
- *Recording charts, plotter papers, films and pens, facsimile papers, printer papers, recording pens, drafting supplies, inks, medicated lotion, EKG solutions, ultrasound gels, ECG electrodes, leads, guidewires, catheters, graph paper, hemodialysis needles, cables, blood pressure monitoring kits, oceanographic/seismographic papers.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of electrically conductive adhesives*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *1987*

COLLABORATIONS/AFFILIATIONS:

NAME: *Hamilton Porcelains Ltd.*

HEAD OFFICE:

Box 594 - 25 Campbell Street
Brantford, Ontario
N3T 5N9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *4 000 000*

TEL: *(519) 753-8454*
TELEX: *061-81194*
PRESIDENT: *A.V. Mason*
YEAR ESTABLISHED: *1945*
NO. OF EMPLOYEES: *130*
ANNUAL SALES ($): *7 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Technical ceramics*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Design and start-up of completely automated state-of-the-art factory to make technical ceramics*
- *Development of ceramic sintering for high quality foundries*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Hammond Manufacturing Company Limited*

HEAD OFFICE:

394 Edinburgh Road North
Guelph, Ontario
N1H 1E5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 822-2960*
TELEX: *069-56523*
PRESIDENT: *Robert F. Hammond*
YEAR ESTABLISHED:
NO. OF EMPLOYEES: *1700*
ANNUAL SALES ($): *109 220 709*
PARENT COMPANY:

PRODUCTS AND SERVICES:

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Superconductivity as applied to transformers*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Hard Materials Research Inc.*

HEAD OFFICE:

980 Pacific Gate, Unit 15
Mississauga, Ontario
L5T 1Y1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($): *600 000*

TEL: *(416) 677-0505*
TELEX: *06-982434*
PRESIDENT: *R.W. Thompson*
YEAR ESTABLISHED: *1986*
NO. OF EMPLOYEES: *4*
ANNUAL SALES ($):
PARENT COMPANY: *Boart Canada Inc. (50%)*

PRODUCTS AND SERVICES:
- *Development and manufacture (pilot scale) of specialized sintered hard materials.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of hard metal products with enhanced corrosion resistance*
- *Development of hard metals with enhanced creep resistance*
- *Development of ultra-fine grain hard metal*

AIM/AMPT RELATED EXPENDITURES ($): *800 000*
NO. OF RESEARCHERS INVOLVED: *4*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:

NAME: *Hardy BBT Limited*

HEAD OFFICE:
4810 - 93 Street
P.O. Box 746
Edmonton, Alberta
T5J 2L4

RESEARCH FACILITIES:
- *Edmonton*
- *Calgary*
- *Vancouver*

TEL: *(604) 984-9241*
TELEX: *04-354841*
TOTAL RESEARCH STAFF: *25*
TOTAL R&D EXPENDITURES ($): *500 000*

TEL: *(403) 436-2152*
TELEX: *037-3750*
PRESIDENT: *W.A. Slusarchuk*
YEAR ESTABLISHED: *1950*
NO. OF EMPLOYEES: *300*
ANNUAL SALES ($): *14 000 000*
PARENT COMPANY: *AGRA Industries*

PRODUCTS AND SERVICES:
- *Consulting engineering and professional services*
- *Geotechnical and materials engineering, environmental*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of silica fume admixtures for concrete and shotcrete*
- *Development of steel fibre reinforced concrete and shotcrete for the construction and mining industries*

AIM/AMPT RELATED EXPENDITURES ($): *175 000*
NO. OF RESEARCHERS INVOLVED: *6*
EXPECTED COMPLETION DATE: *June 1987*

COLLABORATIONS/AFFILIATIONS:
- *Domecrete Canada Limited*
- *Target Products Limited*

HEAD OFFICE:

4 Robert Speck Parkway
Mississauga, Ontario
L4Z 1S1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 848-1800*
TELEX: *06-960107*
PRESIDENT: *Harold N. Kenton*
YEAR ESTABLISHED: *1912*
NO. OF EMPLOYEES: *800*
ANNUAL SALES ($): *300 000 000*
PARENT COMPANY: *Hercules Inc.*

PRODUCTS AND SERVICES:
- *Polypropylene films & fibres*
- *Reaction injection moulding materials & structures*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Moulding large commercial structures using polydicyclopentadiene reaction injection moulding compounds*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Himont Canada Inc.*

HEAD OFFICE:

4 Robert Speck Parkway
Mississauga, Ontario
L4Z 1S1

RESEARCH FACILITIES:
Laboratory in Varennes, Quebec
R&D Centre in Wilmington (U.S.A.)

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 848-8800*
TELEX: *06960107*
PRESIDENT: *J. Bruce Stewart*
YEAR ESTABLISHED: *1983*
NO. OF EMPLOYEES: *175*
ANNUAL SALES ($): *100 000 000*
PARENT COMPANY: *Himont Inc.*

PRODUCTS AND SERVICES:
- *Homopolymer & copolymer polypropylene*
- *Amorphous polypropylene, UHMW polyethylene*
- *Composite materials & alloys based on polypropylene*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Various projects centred around composite materials.*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Huron Technologies Inc.*

HEAD OFFICE:

3034 Palstan Road, Suite 103
Mississauga, Ontario
L4Y 2Z6

RESEARCH FACILITIES:
25 Don Street
P.O. Box 1145
Kingston, Ontario K7L 4Y5

TEL: *(613) 546-2651*
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 279-1034*
TELEX: *0533150*
PRESIDENT: *H.V. Casson*
YEAR ESTABLISHED: *1958*
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Electrochemical R&D*
- *Engineering and technology, servicing primarily the pulp and paper industry.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Precious metal coated anodes for the industrial electrochemical industries*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Hydro-Québec*

HEAD OFFICE:

75, boul. Dorchester ouest
Montréal (Québec)
H2Z 1A4

TEL: *(514) 289-2211*
TELEX: *05-561047*
PRESIDENT: *M. Guy Coulombe*
YEAR ESTABLISHED: *1944*
NO. OF EMPLOYEES: *18 470*
ANNUAL SALES ($): *4 024 000 000*
PARENT COMPANY:

RESEARCH FACILITIES: *IREQ*
1800 Montée Ste-Julie
Varennes (Québec)
J0L 2P0

TEL: *(514) 652-8011*
TELEX: *05-267486*
TOTAL RESEARCH STAFF: *350*
TOTAL R&D EXPENDITURES ($): *66 300 000*

PRODUCTS AND SERVICES:
- *Generation, transmission, distribution and sale of electric energy*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Research and development of high Tc superconductors*
- *Development of new lithium aaccumulatores using polymers as electrolytes*
- *Alloy, nickel or amorphous-metal electrodes for aqueous electrolysis*
- *Catalytic agents (synthesis and characterization) for the processing of methane into petrochemical dirivatives by selective oxidation*
- *Amorphous metal coatings and surfac modifications*
- *Amorphous metals coatings and surface modifications*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

continued ...

NAME: *Hydro-Québec*

HEAD OFFICE:

RESEARCH FACILITIES:

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL:
TELEX:
PRESIDENT:
YEAR ESTABLISHED:
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of manufacturing techniques for amorphous metals*
- *Focus research and characterization of amorphous metals*
- *Evaluation of injection products for the repare of cracks in concrete dams*
- *Development and commercialization of steel resistant to erosive cavitation*
- *Mechanical characterization of fiberglass composites for electrical insulators*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

1900, boul. des Sources
Pointe-Claire (Québec)
H9R 4Z3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 697-8033*
TELEX: *063666*
PRESIDENT: *John J. Nassr*
YEAR ESTABLISHED: *1971*
NO. OF EMPLOYEES: *40*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *CAD/CAM software and services*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *CAM-Mould:* *Family of software for mould and part design and analysis. Uses a materials database to carry out polymer filling simulation, flow path balancing, cooling analysis and mold stress analysis.*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *NRC/IMRI*
- *McGill University*
- *Ecole Polytechnique*

Note: Joint marketing/development with IMRI

NAME: *Indusmin Division of Falconbridge Limited* 50

HEAD OFFICE:

365 Bloor Street East, Suite 200
Toronto, Ontario
M4W 3L4

RESEARCH FACILITIES: *Technical Centre*
2651 John Street, Unit 5
Markham, Ontario

TEL: *(416) 474-1455*
TELEX:
TOTAL RESEARCH STAFF: *4*
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 967-1900*
TELEX: *06-22607*
PRESIDENT: *C.M. Woodruff*
YEAR ESTABLISHED: *1936*
NO. OF EMPLOYEES: *731*
ANNUAL SALES ($): *60 000 000*
PARENT COMPANY: *Falconbridge Limited*

PRODUCTS AND SERVICES:
- *Industrial minerals*
- *Steel alloy castings*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Advanced ceramic powder production*
- *High grade silica production*
- *Advanced alloy research*

AIM/AMPT RELATED EXPENDITURES ($): *200 000*
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *ORF*
- *Scrata*

NAME: *Industrial Ceramics Ltd.*

HEAD OFFICE:

473 Hensall Circle
Mississauga, Ontario
L5A 1X9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *100 000*

TEL: *(416) 276-5447*
TELEX: *06-960196*
PRESIDENT: *H.O. Lawrence*
YEAR ESTABLISHED: *1946*
NO. OF EMPLOYEES: *20*
ANNUAL SALES ($): *1 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Manufacturing aluminas, zircon, zirconias, steatite, cordierites.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of higher temperature zircon based ceramics*
- *Development of zirconia facility*
- *Development of SiN facility*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Industrial Formulators of Canada Ltd.* 52

HEAD OFFICE:

3824 William Street
Burnaby, British Columbia
V5C 3H9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 294-6315*
TELEX:
PRESIDENT: *James J. Peters*
YEAR ESTABLISHED: *1959*
NO. OF EMPLOYEES: *10*
ANNUAL SALES ($): *700 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:

- *Epoxy bonding agents, sealers, coatings, grouts, paints, etc.*
- *Custom formulating to suit specific requirements*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Room temperature epoxy resins for composite construction*
- *Metal bonding agents*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Infrared Photographic Ltd.*

HEAD OFFICE:

74 Burland Street
Ottawa, Ontario
K2B 6K1

RESEARCH FACILITIES:
Room B-12, Physics Department
University of Ottawa

TEL: *(613) 564-7041; 828-0683*
TELEX:
TOTAL RESEARCH STAFF: *1-3*
TOTAL R&D EXPENDITURES ($): *100 000*

TEL: *(613) 828-0683*
TELEX:
PRESIDENT: *W.E. Pinson, BASc, PhD*
YEAR ESTABLISHED: *1972*
NO. OF EMPLOYEES: *1-3*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *R&D and consulting involving semiconductors*
- *Semiconductor photoelectrochemistry*
- *Semiconductor thin films*
- *Semiconductor infrared detectors*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Sorting semiconductor minerals by physical means. Keywords: tunnel boring machines, uv excimer laser-excited luminescence, nanosec visible and ir detectors, vacuum actuated sorters*

- *Thin film tandem pv devices produced by hot wall evaporation of II-VI semiconductors on PN Si substrates*

- *Photoelectrochemical machining of small semiconductor lenses for use in conjunction with fibre optics*

- *Tungsten halogen or tungsten lamps with extended lifetime*

- *Production of hydrogen fuel by renewable energy-driven electrolysis and its use in a standard diesel engine modified for low Nox emission*

AIM/AMPT RELATED EXPENDITURES ($): *100 000*
NO. OF RESEARCHERS INVOLVED: *1-3*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *Physics Department, University of Ottawa*
- *EE and Physics Division of NRC*

HEAD OFFICE:

48 Crockford Blvd.
Scarborough, Ontario
M1R 3C3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 752-6266*
TELEX:
PRESIDENT: *H. Mosgoll*
YEAR ESTABLISHED: *1962*
NO. OF EMPLOYEES: *95*
ANNUAL SALES ($): *4 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Contracts manufacturing facility for defence military aerospace as well as consumer goods.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Presently using some AIM/AMPT technology on customer contracts. (proprietary information)*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Inrad Industrial Research and Development Ltd.*

HEAD OFFICE:

128 Adelaide Street
Winnipeg, Manitoba
R3A 0W5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(204) 943-6870*
TELEX:
PRESIDENT: *Edward (Ted) A. Speers*
YEAR ESTABLISHED: *1975*
NO. OF EMPLOYEES: *4*
ANNUAL SALES ($): *250 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Industrial research and development, lab work*
- *TiO glass, SnO glass*
- *Silicodizing of aluminum, magnesium and alloys*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Photocatalytic porous titania glass*
- *Hydrogen detector*
- *Photocatalytic conversion of methane or natural gas into liquid hydrocarbons*
- *Super windows*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *Speers McGonigal (1980) Ltd.*
- *Edward A. Speers & Associates (Consulting Engineers)*

NAME: *International Radiochemical Centre Inc.* 56

HEAD OFFICE:

8444-45 Street
Edmonton, Alberta
T6B 2N6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *6*
TOTAL R&D EXPENDITURES ($): *70 000*

TEL: *(403) 469-0653*
TELEX: *37-43341*
PRESIDENT: *Dr. John Tse*
YEAR ESTABLISHED: *1981*
NO. OF EMPLOYEES: *8*
ANNUAL SALES ($): *270 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Radioactive chemicals*
- *Radiopharmaceuticals*
- *Radiation detection equipment*
- *Radioactive tracer application consulting services*
- *Radiation safety consulting services*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Ceramics: thermal, nuclear*
- *Storage batteries*
- *Composites*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *International Tools*

HEAD OFFICE:
3805 Malden Road
P.O. Box 7068
Windsor, Ontario
N9C 3Y8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 969-7071*
TELEX:
PRESIDENT: *W.M. Argue*
YEAR ESTABLISHED: *1946*
NO. OF EMPLOYEES: *150*
ANNUAL SALES ($): *15 000 000*
PARENT COMPANY: *ITL Industries Ltd.*

PRODUCTS AND SERVICES:
- *Mould makers for injection, reaction injection, compression, SMC, woodstock with complete mould design and modelmaking capability*
- *CAD/CAM*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Tooling allowing the interfusion of carpet and a semi-rigid plastic substrate*
- *Development, with clients, of moulds for new or improved processes*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

- *Ford*
- *K.W. Muth (U.S.)*
- *Guardian Glass (U.S.)*

NAME: *Jan Tesar - Exco Engineering*

HEAD OFFICE:

60 Spy Court
Markham, Ontario
L3R 5H6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 475-9440*
TELEX: *06-966700*
PRESIDENT: *Brian A. Robbins*
YEAR ESTABLISHED: *1956*
NO. OF EMPLOYEES: *300*
ANNUAL SALES ($): *30 000 000*
PARENT COMPANY: *Exco Technologies Ltd.*

PRODUCTS AND SERVICES:
- *Die and moulds for die casting and low pressure and cavity casting moulds.*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *aluminum oxide fibre impregnated aluminum castings*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

150 Bluewater Road
Bedford, Nova Scotia
B4B 1G9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *22*
TOTAL R&D EXPENDITURES ($): *1 500 000*

TEL: *(902) 835-7268*
TELEX: *019-21779*
PRESIDENT: *Klaus Baumgartner*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *86*
ANNUAL SALES ($): *4 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Power conversion equipment for both commercial and defence markets*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *UPS systems*
- *Transfer switch systems*
- *Vacuum potting at temperature extremes and high voltage*
- *Static frequency changers*
- *Helicopter starter systems*

AIM/AMPT RELATED EXPENDITURES ($): *1 500 000*
NO. OF RESEARCHERS INVOLVED: *22*
EXPECTED COMPLETION DATE: *1989*

COLLABORATIONS/AFFILIATIONS:

1 of 4

NAME: *Kennametal Inc. Macro Division* 60

HEAD OFFICE:

1651 Kingsway Avenue
Port Coquitlam, British Columbia
V3C 1S3

RESEARCH FACILITIES: *(Independent)*

Have access to laboratories and library services at head office

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 941-9611*
TELEX: *04-353516*
PRESIDENT: *O.C. McKenna (Latrobe,Pa)*
YEAR ESTABLISHED: *1951*
NO. OF EMPLOYEES: *55*
ANNUAL SALES ($): *12 000 000*
PARENT COMPANY: *Kennametal Inc., Latrobe, Pa.*

PRODUCTS AND SERVICES:
- *Hardmetal carbide powders*
- *Hard nitrides for cermets*
- *Hard facing products*
- *Alloy powders for diamond tools*
- *High temperature vacuum furnace refining (service)*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Develop new spray powders*
- *Development of hard facing weld-wire filler*
- *Preparation of milled Cr_3C_2*
- *Carbide recovery of carbide residues*
- *Improvements to TiC production liquors*
- *Cobalt recovery from HCl and H_2SO_4 leaching liquors*
- *Investigation of other hardmetals and liquors*
- *Menstruum crucible composition*
- *Reduction of middle and upper content on our menstruum leaching liquors*
- *Improved WC recoveries*
- *Improved composite wear-pads*
- *Cobalt recovery for matrix use*

AIM/AMPT RELATED EXPENDITURES ($): *62 000*
NO. OF RESEARCHERS INVOLVED: *11*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: - *Presently working with the B.C. Hydro research lab for a joint project to develop plasma reactor synthesis of various metal carbides and nitrides*

NAME: *Lakeside Electronics Limited*

HEAD OFFICE:

321 Hopkins Street
Whitby, Ontario
L1N 2C1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *100 000*

TEL: *(416) 668-2981*
TELEX:
PRESIDENT: *A.J. Ankus*
YEAR ESTABLISHED: *1969*
NO. OF EMPLOYEES: *6*
ANNUAL SALES ($): *360 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Piezoelectric ceramics*
- *Conductive paste*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Thin sheet piezoelectric ceramic*
- *Silver powder*

AIM/AMPT RELATED EXPENDITURES ($): *100 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *early 1988*

COLLABORATIONS/AFFILIATIONS:

NAME: *London Laboratories Ltd.*

HEAD OFFICE:

1025 Hargieve Road
London, Ontario
N6E 1P7

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 681-2600*
TELEX: *064-7534*
PRESIDENT: *Joseph Soltys, Ph.D.*
YEAR ESTABLISHED: *1955*
NO. OF EMPLOYEES: *5*
ANNUAL SALES ($):
PARENT COMPANY: *London Laboratories Ltd., Woodbridge, Connecticut*

PRODUCTS AND SERVICES:

- *Electroless silvering and coppering chemicals for the manufacture of glass mirrors, thermos bottles, Christmas ornaments, compact audio-video discs and the metalizing of plastics.*

- *Metalizing of solar glass or plastic reflectors technology available*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of new and improved processes in the field of electroless silvering and coppering chemistry for industries related to mirror, thermos bottle, compact disc production and the metalizing of plastics in general*

- *Metalizing ceramics*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Lumonics Inc.*

HEAD OFFICE:
105 Schneider Road
Kanata, Ontario
K2K 1Y3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *50*
TOTAL R&D EXPENDITURES ($):

TEL: *(613) 592-1460*
TELEX: *053 4503*
PRESIDENT: *R.J. Atkinson*
YEAR ESTABLISHED: *1971*
NO. OF EMPLOYEES: *140*
ANNUAL SALES ($): *80 000 000*
PARENT COMPANY: *Lumonics Inc.*

PRODUCTS AND SERVICES: *- Lasers and laser systems*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Industrial applications for laser materials processing including welding, drilling, cutting, heat treating and marking*

- *Research and development on the use of fibre optics for transmission of high power laser beams for industrial tasks*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *MPB Technologies Inc.*

HEAD OFFICE:
1725 North Service Road
Route Transcanadienne
Dorval (Québec)
H9P 1J1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *49*
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 683-1490*
TELEX: *05-823509*
PRESIDENT: *M.P. Bachynski*
YEAR ESTABLISHED: *1976*
NO. OF EMPLOYEES: *90*
ANNUAL SALES ($): *8 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Microwave/millimeterwave technology*
- *Laser/electro-optics technology*
- *Products & manufacturing customized systems*
- *Digital electronics activities*
- *Fusion related activities*
- *Communications*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Crystal growth of GaAsIn by LPEE in the reduced gravity environment of space*
- *Hard sealing of stainless steel alloys to ceramic; semiconductor windows to glass or quartz*
- *Laser machining and processing of various materials (plastics; quartz; metals; foams; etc ...)*
- *Non-destructive testing of composite materials and structures by real-time laser interferometry*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *McGill University*
- *Opto-Electronics Inc.*
- *OMVPE Technologies Inc.*

NAME: *Madison Chemical Industries Inc.*

HEAD OFFICE:

490 McGeachie Drive
Milton, Ontario
L9T 3Y5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *6*
TOTAL R&D EXPENDITURES ($): *300 000*

TEL: *(416) 826-8310*
TELEX:
PRESIDENT: *Ross Mitchell*
YEAR ESTABLISHED: *1973*
NO. OF EMPLOYEES: *35*
ANNUAL SALES ($): *7 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES: *- Polyurethane coatings for use on underground tanks, general maintenance applications, roofing applications, pipelines, marine applications and automotive gas tanks*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of protective coatings for pipelines*

- *Development of an elastomeric roofing membrane for built-up-roofing*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *6*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

HEAD OFFICE:

23 Kodiak Crescent, Suite 200
Downsview, Ontario
M3J 3E5

RESEARCH FACILITIES: *Moulding Division*
375 Danforth Road
Scarborough, Ontario
M1L 3X9

TEL: *(416) 698-2545*
TELEX: *06-963712*
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 630-2779*
TELEX: *06-23119*
PRESIDENT: *P. Rothstein*
YEAR ESTABLISHED: *1943*
NO. OF EMPLOYEES: *300+*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Custom moulded thermoplastic and thermoset plastic products*
- *Extruded pipe*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Composites*
- *Engineering plastics*
- *State-of-the-art injection moulding*
- *Applications development*
- *Conductive polymers*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Metal 7 Inc.*

HEAD OFFICE:
C.P. 1590
285, des Pionniers
Sept-Iles (Québec)
G4R 4X9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *200 000*

TEL: *(418) 968-5822*
TELEX: *051-8-4130*
PRESIDENT: *Arthur Leblanc*
YEAR ESTABLISHED: *1975*
NO. OF EMPLOYEES: *33*
ANNUAL SALES ($): *2 400 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Plasma coating (neoceramics) of parts such as pump handles, fan blades, etc.*
- *Manufacture and distribution of heating systems (burners)*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Research and development on ceramic coatings and their new applications (railways, cooling fans, mineral exhaust fans etc.)*
- *Research and development on corrosion-resistant or other contaminant-resistant bond coatings*

AIM/AMPT RELATED EXPENDITURES ($): *200 000*
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *CNRC*
- *CRIQ*
- *IGM*

NAME: *Moli Energy Limited*

HEAD OFFICE:

1199 W. Hastings Street, 14th Floor
Vancouver, British Columbia

RESEARCH FACILITIES:
3958 Myrtle Street
Burnaby, British Columbia
V5C 4G2

TEL: *(604) 437-6927*
TELEX: *04-356708*
TOTAL RESEARCH STAFF: *35*
TOTAL R&D EXPENDITURES ($): *200 000*

TEL: *(604) 437-6927*
TELEX: *04-356708*
PRESIDENT: *Mr. Boris Sawicky*
YEAR ESTABLISHED: *1977*
NO. OF EMPLOYEES: *160*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *"AA" size Lithium Molybdenum Disulphide ($LiMoS_2$) batteries -- product name: MOLICEL (registered)*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of improved cathodes for $LiMoS_2$ batteries*
- *Increasing the capacity and cycle life of MOLICEL (registered) products*

AIM/AMPT RELATED EXPENDITURES ($): *400 000*
NO. OF RESEARCHERS INVOLVED: *9*
EXPECTED COMPLETION DATE: *August/87*

COLLABORATIONS/AFFILIATIONS: *- Mitsui & Co.,Tokyo & Teck Corporation, Vancouver*
Note: Moli Energy has to date been an R&D organization but the company is in the process of constructing a manufacturing facility, to start 09/87

NAME: *Morval-Durofoam Ltd.*

HEAD OFFICE:
152 Birch Avenue
P.O. Box 878
Kitchener, Ontario
N2G 4E1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 579-6100*
TELEX: *06-955836*
PRESIDENT: *K.M. Shantz*
YEAR ESTABLISHED: *1953*
NO. OF EMPLOYEES: *400*
ANNUAL SALES ($): *30 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Plastic Processor: Expanded polystyrenes, moulded or fabricated packaging, insulations*
- *Retail products: Evaporative polystyrene foam patterns for the foundry industry*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *E.C.P. (evaporative casting patterns)*
- *Improved VENTLESS tooling method (patented) to mould extra smooth finished polystyrene patterns for the metal casting industry*

AIM/AMPT RELATED EXPENDITURES ($): *300 000*
NO. OF RESEARCHERS INVOLVED: *1*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Multiplex Chemicals Ltd.* *70*

HEAD OFFICE:

1093 Margaret Street
London, Ontario
N5W 2J9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(519) 451-1720*
TELEX: *064-7570*
PRESIDENT: *Mr. Zoltan Halmai*
YEAR ESTABLISHED: *1966*
NO. OF EMPLOYEES: *6*
ANNUAL SALES ($): *550 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Resins, coatings, adhesives; sold under trade names, PYROGRIP, MARBOTHANE, MULTICHEM, MULTIGUARD*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *New and improved universal colorant systems of wide general applicability*
- *Studies of corrosion prevention*
- *Studies on high durability coatings of low toxicity*
- *Investigation of novel corrosion inhibition systems*
- *Development of self priming enamel systems*

AIM/AMPT RELATED EXPENDITURES ($): *50 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *1989-90*

COLLABORATIONS/AFFILIATIONS:

NAME: *Noranda Inc.*

HEAD OFFICE:

P.O. Box 45, Commerce Court West
Toronto, Ontario
M5L 1B6

RESEARCH FACILITIES: *Research Centre*
240, boul. Hymus
Pointe-Claire (Québec)
H9R 1G5

TEL: *(514) 697-6640*
TELEX: *05-822647 NRC PCL*
TOTAL RESEARCH STAFF: *130*
TOTAL R&D EXPENDITURES ($): *9 200 000*

TEL:
TELEX:
PRESIDENT:
YEAR ESTABLISHED:
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Primary metals, fabricated metal products, photocopier alloys, wire and cable products, fibre optic systems, sulpuric acid, fertilizers, wood and paper products, oil and gas*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Zinc-aluminum casting alloys*
- *Advanced casting technology*
- *Rapid solidification of copper alloys*
- *Opto-electronic materials*
- *Properties and applications of Selenium alloy photoreceptors*

AIM/AMPT RELATED EXPENDITURES ($): *1 000 000*
NO. OF RESEARCHERS INVOLVED: *0*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *Nova Crystals Limited*
- *CANMET*
- *NRC, Industrial Materials Research Institute*

NAME: *Onex Packaging Inc.*

HEAD OFFICE:

One International Blvd.
Rexdale, Ontario
M9W 1A1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 675-3490*
TELEX: *06-989211*
PRESIDENT: *C.F. Heilmann*
YEAR ESTABLISHED: *1904*
NO. OF EMPLOYEES: *2500*
ANNUAL SALES ($): *450 000 000*
PARENT COMPANY: *Canadian Public Company*

PRODUCTS AND SERVICES:
- *Packaging*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Plastics rigid packaging*
- *Composite structures*
- *New processes for manufacture of containers*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *- American National Can (US)*

NAME: *Ontario Hydro*

HEAD OFFICE:

700 University Avenue
Toronto, Ontario
M5G 1X6

RESEARCH FACILITIES: *Research Division*
Dobson Research Laboratories
800 Kipling Avenue
Toronto, Ontario M8Z 5S4

TEL: *(416) 231-4111*
TELEX: *06-984706*
TOTAL RESEARCH STAFF: *620*
TOTAL R&D EXPENDITURES ($): *53 000 000*

TEL: *(416) 592-5111*
TELEX: *06-217662*
PRESIDENT: *R. Franklin*
YEAR ESTABLISHED: *1912*
NO. OF EMPLOYEES: *~23 000*
ANNUAL SALES ($): *4 600 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Generation and delivery of electrical energy for Province of Ontario*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of electrotechnologies from processing of advanced ceramic materials (e.g., plasma, microwave)*

- *Internal working group on AIM, assessing applications within electrical system*

AIM/AMPT RELATED EXPENDITURES ($): *300 000*
NO. OF RESEARCHERS INVOLVED: *~8*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:
- *University of Toronto*
- *McMaster University*
- *Queen's University*

NAME: *Optotek Limited*

HEAD OFFICE:

62 Steacie Drive
Kanata, Ontario
K2K 2A9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *15*
TOTAL R&D EXPENDITURES ($):

TEL: *(613) 591-0336*
TELEX: *053-3524*
PRESIDENT: *David I. Kennedy*
YEAR ESTABLISHED: *1977*
NO. OF EMPLOYEES: *30*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Design and development of processing techniques for gallium arsenide monolithic microwave integrated circuits.*
- *Design & development of processing techniques for cadmium mercury telluride infrared detectors*
- *Design & development of advanced processing techniques for light emitting diode (LED) materials and devices.*

AIM/AMPT RELATED EXPENDITURES ($): *2 000 000*
NO. OF RESEARCHERS INVOLVED: *15*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *PBI/Plastibeton Inc.*

HEAD OFFICE:

3600 Pitfield
Montreal, Quebec
H8Y 9Z7

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *5*
TOTAL R&D EXPENDITURES ($): *200 000*

TEL: *(514) 335-9292*
TELEX:
PRESIDENT: *Peter F. Trent*
YEAR ESTABLISHED: *1975*
NO. OF EMPLOYEES: *75*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Polymer-Granite (Trademark) building products*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *High volume production of Polymer-Granite (Trademark) composites (5% polymer 95% granite or quartz) in sheet form using compression moulding and three dimensional moulded objects using injection moulding*

AIM/AMPT RELATED EXPENDITURES ($): *200 000*
NO. OF RESEARCHERS INVOLVED: *5*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Polysar Limited*

HEAD OFFICE:
Polysar Building
201 Front Street North
Sarnia, Ontario
N7T 7V1

RESEARCH FACILITIES:
Canada (Sarnia), U.S. & Europe

TEL:
TELEX:
TOTAL RESEARCH STAFF: *525*
TOTAL R&D EXPENDITURES ($): *47 000 000*

TEL: *(519) 332-1212*
TELEX: *064-76155*
PRESIDENT: *Robert S. Dudley*
YEAR ESTABLISHED: *1942*
NO. OF EMPLOYEES: *6500*
ANNUAL SALES ($): *2 000 000 000*
PARENT COMPANY: *Canadian Development Corporation*

PRODUCTS AND SERVICES:
- *Synthetic rubber, latices, plastics, specialty products*
- *Basic petrochemicals*
- *Fuel products*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Research on new or improved synthetic rubbers, latices, plastics, specialties, etc., and associated processes for manufacturing same with the objective of producing a technically and/or economically superior product.*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: - *Work closely with specific universities in Canada, U.S. and Europe*

NAME: *Pratt & Whitney Canada Inc.*

HEAD OFFICE:
1000 Marie-Victorin
Longueuil, Quebec
J4G 1A1

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2358*
TOTAL R&D EXPENDITURES ($): *261 473*

TEL: *(514) 677-9411*
TELEX: *05 267509*
PRESIDENT: *L.D. Caplan*
YEAR ESTABLISHED: *1928*
NO. OF EMPLOYEES: *8679*
ANNUAL SALES ($): *813 000 000*
PARENT COMPANY: *United Technologies*

PRODUCTS AND SERVICES:
- *Gas turbine repair and overhaul*
- *Gas turbine design and development, manufacture and sale*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:
- *Gas turbine composites technology*

AIM/AMPT RELATED EXPENDITURES ($): *100 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: - *DeHavilland Aircraft*

NAME: *Raylo Chemicals*

HEAD OFFICE:
Division of Terochem Laboratories Ltd.
8045 Argyll Road
Edmonton, Alberta
T6C 4A9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(403) 468-6060*
TELEX: *037-43236*
PRESIDENT: *Dr. G. Tertzakian*
YEAR ESTABLISHED: *1962*
NO. OF EMPLOYEES: *42*
ANNUAL SALES ($): *5 000 000*
PARENT COMPANY: *Terochem Laboratories Ltd.*

PRODUCTS AND SERVICES:
- *Manufacture of organic intermediates*
- *Contract research*
- *Custom synthesis*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Photo-resists*
- *Storage batteries*
- *Specialty polymers*
- *Composites*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Reichhold Limited*

HEAD OFFICE:
Mississauga Executive Centre
Four Robert Speck Parkway, Suite 700
Mississauga, Ontario
L4Z 1S1

RESEARCH FACILITIES:
- *Toronto*
- *Ste. Therese*
- *Port Moody*

TEL: *head office for initial contact*
TELEX:
TOTAL RESEARCH STAFF: *40*
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 848-5540*
TELEX: *06-960282*
PRESIDENT: *R.B. Hadgraft*
YEAR ESTABLISHED: *1947*
NO. OF EMPLOYEES: *475*
ANNUAL SALES ($):
PARENT COMPANY: *Reichhold Chemicals Inc.*

PRODUCTS AND SERVICES:
- *Supplier of resins and binders and formaldehyde*
- *Solvent based resin emulsions, water soluble polymers*
- *Thermosetting resins*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *High performance polymer composites - resin and process development*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Scintrex Limited* 80

HEAD OFFICE:

222 Snidercroft Road
Concord, Ontario
L4K 1B5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *45*
TOTAL R&D EXPENDITURES ($): *2 000 000*

TEL: *(416) 669-2280*
TELEX: *06-964570*
PRESIDENT: *H.O. Seigel*
YEAR ESTABLISHED: *1960*
NO. OF EMPLOYEES: *180*
ANNUAL SALES ($): *12 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES: *- Scientific instruments*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Quartz element gravimeters*
- *Ceramic laser tubes*

AIM/AMPT RELATED EXPENDITURES ($): *160 000*
NO. OF RESEARCHERS INVOLVED: *4*
EXPECTED COMPLETION DATE: *1987*

COLLABORATIONS/AFFILIATIONS:

NAME: *Servo-Robot Inc.*

HEAD OFFICE:

1380, Graham Bell
Boucherville (Québec)
J4B 6H5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *10*
TOTAL R&D EXPENDITURES ($): *1 000 000*

TEL: *(514) 655-4223*
TELEX: *05-267624*
PRESIDENT: *Jean-Paul Boillot*
YEAR ESTABLISHED: *1983*
NO. OF EMPLOYEES: *15*
ANNUAL SALES ($): *1 000 000*
PARENT COMPANY: *Mec-Fab Inc.*

PRODUCTS AND SERVICES:
- *Turn key welding robotics system*
- *Laser machine vision systems for*
  - *robot guidance (arc-welding, assembly, gaging)*
  - *inspection*
  - *3D surface mapping*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Off-line programming using SATURN laser range finder*
- *JUPITER and adaptive robotics laser vision machine*
- *SATURN machine vision for adaptive welding*
- *Surface mapping system for inspection and overlay applications*

AIM/AMPT RELATED EXPENDITURES ($): *1 000 000*
NO. OF RESEARCHERS INVOLVED: *10*
EXPECTED COMPLETION DATE: *December/89*

COLLABORATIONS/AFFILIATIONS:
- *NRC, Electrical Engineering Division, Ottawa*
- *NRC, Industrial Materials Research Institute, Québec*

NAME: *Sherritt Gordon Mines Limited* 82

HEAD OFFICE:

2800 Commerce Court West
Toronto, Ontario
M5L 1B1

RESEARCH FACILITIES: *Research Centre*
Fort Saskatchewan, Alberta
T8L 2P2

TEL: *(403) 998-6911*
TELEX: *037-2290*
TOTAL RESEARCH STAFF: *70*
TOTAL R&D EXPENDITURES ($): *4 000 000*

TEL: *(416) 363-9241*
TELEX: *062-2195*
PRESIDENT: *A.R. Latham*
YEAR ESTABLISHED: *1927*
NO. OF EMPLOYEES: *1657*
ANNUAL SALES ($): *390 886 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Nickel and Cobalt refinery*
- *World scale fertilizer plants*
- *Special products division Sherrit Research Centre*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Ultrafine Nickel and Copper powders for sintered circuits*
- *Nickel coated composite powders for electrically conductive plastics and paints*
- *High strength rare earth-transition metal permanent magnets*
- *Specialty coinage metals*
- *Nickel and Cobalt coated composite powders for thermal spray applications*
- *Controlled porosity filter media*
- *Wear resistant materials*

AIM/AMPT RELATED EXPENDITURES ($): *1 500 000*
NO. OF RESEARCHERS INVOLVED: *20*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Sinteris Inc.*

HEAD OFFICE:
P.O. Box 280
325 Chatham Street North
Blenheim, Ontario
NOP 1A0

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($): *50 000*

TEL: *(519) 676-8161*
TELEX:
PRESIDENT: *Fleming Pruitt*
YEAR ESTABLISHED: *1972*
NO. OF EMPLOYEES: *48*
ANNUAL SALES ($): *6 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Steel, alloy steel, iron, magnetic iron, stainless steel & copper sintered metal parts (P/M) and related assemblies*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *High strength alloy steel P/M gears*
- *High density, high conductivity P/M copper components*
- *High permeability magnetic iron components*
- *Surface treatments of P/M parts to increase hardness, reduce friction, and/or reduce material costs*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Spaulding Fibre of Canada Ltd.* 84

HEAD OFFICE:

130 The West Mall
Etobicoke, Ontario
M9C 1B9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 622-3524*
TELEX: *06-967500*
PRESIDENT: *George Marton*
YEAR ESTABLISHED:
NO. OF EMPLOYEES: *40*
ANNUAL SALES ($):
PARENT COMPANY: *Spaulding Fibre Company Inc.*

PRODUCTS AND SERVICES:
- *Fabrication of KEVALR Laminates, FILAWOUND composites, G10Cr (epoxy/glass), SPAULRAD (polymide/glass)*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Investigating usage of various reinforcement materials including S-2 glass, Spectra Polyethylene, PBZ graphite, carbon and other resins*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Stelco Inc.*

HEAD OFFICE:
IBM Tower
Toronto-Dominion Centre
Toronto, Ontario
M5K 1J4

RESEARCH FACILITIES:
1375 Kerns Road
Burlington, Ontario

TEL: *(416) 528-2511*
TELEX: *061-8944*
TOTAL RESEARCH STAFF: *114*
TOTAL R&D EXPENDITURES ($): *6 200 000*

TEL: *(416) 362-2161*
TELEX: *061-8621*
PRESIDENT: *J.D. Allan*
YEAR ESTABLISHED: *1910*
NO. OF EMPLOYEES: *17 700*
ANNUAL SALES ($): *2 400 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Steel (plate, sheet, bar and rod products, fasteners and forgings, wire and wire products, pipe and tubular products, cold-drawn bar products)*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Strip casting of steel*
- *Surface behavior of rapidly solidified steel surfaces*

AIM/AMPT RELATED EXPENDITURES ($): *250 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *1995*

COLLABORATIONS/AFFILIATIONS:
- *NRC*
- *CANMET*
- *Canadian Universities*
- *CSIRA*

NAME: *Sternson Ltd.*

HEAD OFFICE:

22 Mohawk Street
Brantford, Ontario
N3T 5N1

RESEARCH FACILITIES: *R&D Laboratories 2500 sq. ft. adequately equipped for testing mechanical properties of materials*

TEL: *(519) 756-6600*
TELEX: *061-81115*
TOTAL RESEARCH STAFF: *6*
TOTAL R&D EXPENDITURES ($): *286 000*

TEL: *(519) 756-6600*
TELEX: *061-81115*
PRESIDENT: *M.T. Bright*
YEAR ESTABLISHED: *1897*
NO. OF EMPLOYEES: *128*
ANNUAL SALES ($): *14 000 000*
PARENT COMPANY: *G.F. Sterne & Sons*

PRODUCTS AND SERVICES:
- *Construction chemicals and industrial plastisols*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of hybrid epoxy-urethane for bonding dissimilar materials in automotive manufacture*
- *Development of self-priming high performance epoxy-urethane sealants and corrosion resistant tank linings*

AIM/AMPT RELATED EXPENDITURES ($): *315 000*
NO. OF RESEARCHERS INVOLVED: *4*
EXPECTED COMPLETION DATE: *May, 1989*

COLLABORATIONS/AFFILIATIONS: - *McMaster Institute of Polymer Technology*

NAME: *Strite Industries Limited*

HEAD OFFICE:
P.O. Box 2405
298 Shepherd Avenue
Cambridge, Ontario
N3C 2V9

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($): *200 000*

TEL: *(519) 658-9361*
TELEX: *069-59383*
PRESIDENT: *J.D. Strite*
YEAR ESTABLISHED: *1964*
NO. OF EMPLOYEES: *298*
ANNUAL SALES ($): *11 000 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Ultra precision machined components and assemblies for aerospace, defence biomedical, and scientific industries*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Prototype manufacturing of high technology for industry, governments and research establishments. (e.g., Infrared detectors, dental implants, surgical instruments, gyro components)*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *TPK International Inc. formerly TPK Solar Systems* 88

HEAD OFFICE:

36 Bentley Avenue
Nepean, Ontario
K2E 6T8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *7*
TOTAL R&D EXPENDITURES ($): *500 000*

TEL: *(613) 225-4403*
TELEX: *053-3930*
PRESIDENT: *R.E. Thomas, Ph.D. P.Eng.*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *20*
ANNUAL SALES ($): *2 500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Solar cells, photovoltaic modules and systems manufacture*
- *Screen printing & surface mount technology*
- *Water purification systems*
- *Production and test equipment*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of Silicon Substrates by a powder-to-ribbon process*
- *Development of all screen printed solar cells and CdTe/CdS solar cells*
- *Amorphous Silicon for solar cells*

AIM/AMPT RELATED EXPENDITURES ($): *450 000*
NO. OF RESEARCHERS INVOLVED: *7*
EXPECTED COMPLETION DATE: *1988*

COLLABORATIONS/AFFILIATIONS:
- *National Research Council*
- *Ecole Polytechnique, Montréal*

NAME: *Technical Pultrusion Inc.*

HEAD OFFICE:

1860, Marie-Victorin
St-Bruno (Québec)
J3V 4P6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *2*
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 653-1731*
TELEX:
PRESIDENT: *Jean-Leon Dufresne*
YEAR ESTABLISHED: *1963*
NO. OF EMPLOYEES: *9*
ANNUAL SALES ($): *500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:

- *Production of: Polymer concrete composite used as electrode supports for electrolytic metal refining process on copper zinc, nickel*
- *Pultrusion profiles used for hydro electric applications, insulators, transformers, etc.*
- *Pultrusion of heavy duty parts used on structural applications*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Structural profiles produced by the pultrusion process with 70% glass content*
- *Cathode and anode produced with conductive plastic composite*
- *Polymer concrete custom made profiles*
- *Composite pultruded parts*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

- *CRIQ*
- *NRC*
- *University of Montreal*

NAME: *Tecrad Inc.*

HEAD OFFICE:
1000, Avenue St-Jean-Baptiste
Suite 105
Québec (Québec)

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *30*
TOTAL R&D EXPENDITURES ($): *1 500 000*

TEL: *(418) 871-3505*
TELEX: *051-31679*
PRESIDENT: *Bertrand Allard*
YEAR ESTABLISHED: *1982*
NO. OF EMPLOYEES: *50*
ANNUAL SALES ($): *4 500 000*
PARENT COMPANY: *Groupe Electromec Inc.*

PRODUCTS AND SERVICES:
- *Instruments in quality control using non-destructive techniques: eddy current, ultrasonic, ultrasonic laser*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *AIDA: Development of a method to dimension cracks on fighter aircraft*
- *Laser/Ultrasonic - Inspection Systems: To measure quality of composite materials and ceramics*
- *Rockwell: Feasibility study to define methods to inspect welds on pipes carrying oxigen to the space shuttle engines*
- *Other projects related to AIM/AMPT*

AIM/AMPT RELATED EXPENDITURES ($): *2 000 000*
NO. OF RESEARCHERS INVOLVED: *12*
EXPECTED COMPLETION DATE: *1989*

COLLABORATIONS/AFFILIATIONS:
- *ASNDT*
- *Dassault*
- *IMRI*
- *CNDT*

NAME: *Tektron Equipment Corp.*

HEAD OFFICE:

230 Arvin Avenue
Stoney Creek, Ontario
L8E 2L8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 662-7820*
TELEX:
PRESIDENT: *Eugene M. Tekatch*
YEAR ESTABLISHED: *1973*
NO. OF EMPLOYEES: *55*
ANNUAL SALES ($): *3 000 000*
PARENT COMPANY: *Tekgen Developments Inc.*

PRODUCTS AND SERVICES:

- *Printed circuit boards, membrane switches, printed circuit board equipment, plastic fabrication, electronic assemblies, industrial electronic design (CAD system), high tech composite materials fabrication*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Membrane switches*
- *Composite fabrication*
- *UV curable inks*
- *Mylar/Lexan interface*

AIM/AMPT RELATED EXPENDITURES ($): *100 000*
NO. OF RESEARCHERS INVOLVED: *2*
EXPECTED COMPLETION DATE: *June 1987*

COLLABORATIONS/AFFILIATIONS: *- John Shuttleworth Designs, England*

NAME: *Tennyson, Hanson, Mabson & Uffen Association Ltd.*

HEAD OFFICE:

5 Framington Drive
Thornhill, Ontario
L3T 4H2

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *100 000*

TEL: *(416) 667-7720*
TELEX:
PRESIDENT: *J.S. Hanson*
YEAR ESTABLISHED: *1979*
NO. OF EMPLOYEES: *3*
ANNUAL SALES ($): *100 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Contract research*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *R&D related to advanced composite materials for aerospace applications*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *5*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Uthane Research Ltd.*

HEAD OFFICE:

3400 14th Avenue, Suite 8
Unionville, Ontario
L2R 3L6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 479-3933*
TELEX:
PRESIDENT: *R.L. Ghali*
YEAR ESTABLISHED: *1977*
NO. OF EMPLOYEES: *10*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Contract R&D*
- *Polyurethane foam systems*
- *R&D into plastic alloys*
- *Evaluation of products*
- *Licensing of new plastic technologies*
- *Contract consulting*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *New plastics, plastic alloys*
- *Liquid foam systems*
- *Conductive, anti-magnetic high temperature plastic foams*
- *Specialty plastic composites*
- *Caulking compounds*
- *Fire proofing systems*
- *Thermal barriers*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *10*
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Vortek Industries Ltd.*

HEAD OFFICE:

1820 Pandora Street
Vancouver, British Columbia
V5L 1M5

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($):

TEL: *(604) 251-2451*
TELEX: *04-352848*
PRESIDENT: *G.G. Albach*
YEAR ESTABLISHED: *1976*
NO. OF EMPLOYEES: *20*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Manufacture of high-power radiant heating systems*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Semiconductors*
- *Specialty metal coatings*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Walbar of Canada Inc.*

HEAD OFFICE:

1303 Aerowood Drive
Mississauga, Ontario
L4W 2P6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *4-6*
TOTAL R&D EXPENDITURES ($): *100 000*

TEL: *(416) 625-2880*
TELEX:
PRESIDENT: *R.E. Neill*
YEAR ESTABLISHED:
NO. OF EMPLOYEES:
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Manufacturer of aero-engine components*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Commencement of the various combination of grinding wheels and their cutting abilities especially on especially on super alloys*

- *Application of electro chemical machining techniques on various alloys*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *4*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:

NAME: *Warnock Hersey*

HEAD OFFICE:
Les services professionels
Warnock Hersey Ltee
128, rue Elmslie
La Salle (Québec) H8R 1V8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(514) 366-3100*
TELEX: *055-66245*
PRESIDENT: *Richard Lafontaine*
YEAR ESTABLISHED: *1888*
NO. OF EMPLOYEES: *300*
ANNUAL SALES ($):
PARENT COMPANY: *Lavalin*

PRODUCTS AND SERVICES:
- *Testing and certification for fire resistance*
- *Tests: acoustics and vibration, metallurgic, on concrete, etc.*
- *Qualified for testing with CSA, ASTM, ASME, ONGC, UL, ULC and ANSI*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Fibreglass automotive springs*
- *Complex stainless steel alloys*
- *Crusher heads*
- *Polyethylene membrane*
- *Polyethylene pipe*
- *Calcium-silicate cores for fire doors*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED:
EXPECTED COMPLETION DATE:

COLLABORATIONS/AFFILIATIONS:

NAME: *Weld-Process International Ltd.*

HEAD OFFICE:

7405 Kimbel Street
Mississauga, Ontario
L4T 3M6

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *3*
TOTAL R&D EXPENDITURES ($): *160 000*

TEL: *(416) 677-7410*
TELEX:
PRESIDENT: *John G. Church*
YEAR ESTABLISHED: *1968*
NO. OF EMPLOYEES: *6*
ANNUAL SALES ($): *3 000 000*
PARENT COMPANY: *Weld-Process International Ltd.*

PRODUCTS AND SERVICES:
- *T.I.M.E. Process*
- *Advanced welding technology special gas mixtures to control plasma formations*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Welding of submarine hulls*
- *Quench tempered steels all position and narrow bevel procedures*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *3*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS:
- *Linde Corporation*
- *DREA - National Defence*
- *Liquid Carbonic Inc.*

NAME: *Zenair Ltd.*

HEAD OFFICE:

Huronia Airport
Midland, Ontario
L4R 4K8

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 859-4556*
TELEX:
PRESIDENT: *Chris Heintz*
YEAR ESTABLISHED: *1974*
NO. OF EMPLOYEES: *12*
ANNUAL SALES ($): *500 000*
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Light aircraft*
- *Aircraft floats and parts*
- *Light aircraft design*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Stainless aluminum*
- *Aluminox*
- *Composites (plastic/polymers)*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *1*
EXPECTED COMPLETION DATE: *1987*

COLLABORATIONS/AFFILIATIONS:

NAME: *Zenon Environmental Inc.*

HEAD OFFICE:

845 Harrington Court
Burlington, Ontario
L7N 3P3

RESEARCH FACILITIES: *Same*

TEL:
TELEX:
TOTAL RESEARCH STAFF: *20*
TOTAL R&D EXPENDITURES ($):

TEL: *(416) 639-6320*
TELEX: *061-8734*
PRESIDENT: *John Coburn*
YEAR ESTABLISHED: *1974*
NO. OF EMPLOYEES: *80*
ANNUAL SALES ($):
PARENT COMPANY:

PRODUCTS AND SERVICES:
- *Water and waste water equipment*
- *Industrial separation (membrane)*
- *Polymeric, semipermeable membranes*
- *Laboratory services*
- *Process development engineering*

AIM/AMPT RELATED RESEARCH OR INTERESTS:

PROJECT TITLES:

- *Development of advanced separation membranes*
- *Membrane-based products for specialty applications*

AIM/AMPT RELATED EXPENDITURES ($):
NO. OF RESEARCHERS INVOLVED: *8*
EXPECTED COMPLETION DATE: *on-going*

COLLABORATIONS/AFFILIATIONS: *Note: Specialized process/product development is carried out with close liaison with industrial customers*

UNIVERSITIES

UNIVERSITY: *Acadia*
FACULTY/DEPARTMENT: *Science/Physics*

ADDRESS: *Wolfville, Nova Scotia*
B0P 1X0

TELEPHONE: *(902) 542-2201*
TELEX:
TOTAL RESEARCH STAFF: *50*
DEPARTMENT HEAD: *Roy Bishop*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Energy efficient window coatings: electrochromics and low-e coatings	*Bryan Latta (902) 542-2201*	*72 000*	*3*	*EMR*

COMMENTS: *Activities: vacuum deposition fabrication; optical and electrical test facilities*
Electronic mail address: LATTA@Acadia, this address works on BITNET, or EARN, or NETNORTH

UNIVERSITY: *Alberta*
FACULTY/DEPARTMENT: *Mechanical Engineering*

ADDRESS: *Edmonton, Alberta*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Development of improved corrosion resistant material for oil-field sucker rods	*Donald G. Bellow (403) 432-3328*		*3*	*Stelco Inc.*
Design/development of plastic rod guides for wear resistance	*Donald G. Bellow (403) 432-3328*		*1*	*Esso Resources*
Development of low-cost, wear resistant material for groder blades	*Donald G. Bellow (403) 432-3328*		*1*	*Stelco Inc.*
Durability and reliability of advanced composite materials	*Fernand Ellyin (403) 432-2009*		*2*	*NSERC*
Enhancement of fatigue and fracture properties of pressure vessel carbon steels	*Fernand Ellyin (403) 432-2009*		*3*	*NSERC*

COMMENTS:

UNIVERSITY: *Alberta*
FACULTY/DEPARTMENT: *Mining, Metallurgical & Petroleum Eng.*

ADDRESS: *606 Chemical/Mineral Eng. Building*
Edmonton, Alberta
T6G 2G6

TELEPHONE: *(403) 432-3337*
TELEX: *037-2979*
TOTAL RESEARCH STAFF: *27*
DEPARTMENT HEAD: *J.M. Whiting*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Ceramic electrolyte and sensors for steelmaking	*T.H. Etsell*	*30 000*	*5*	*NSERC*
Characterization of metal contact to compound semiconductors	*D.G. Ivey*	*15 000*	*3*	*NSERC/BNR*
Resin shrinkage in fiberglass	*R.L. Eadie*	*10 000*	*2*	*NSERC*

COMMENTS:

UNIVERSITY: *Alberta*
FACULTY/DEPARTMENT: *Restorative Dentistry*

TELEPHONE: *(403) 432-4470*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *K. Hinkelman*

ADDRESS: *Dentistry/Pharmacy Centre*
Edmonton, Alberta
T6G 2N8

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Biocompatibility of a silicone elastomer used in facial prosthesis construction	*J. Wolfaarot (403) 432-4470*	*10 000*	*3*	*MRC-South Africa*
The strength of facial prosthetic adhesive systems	*J. Wolfaarot (403) 432-4470*	*	*1*	

COMMENTS: * *new application (+- $15 000)*

UNIVERSITY: *Brandon*
FACULTY/DEPARTMENT: *Science/Physics and Astronomy*

ADDRESS: *Brandon, Manitoba*
R7A 6A9

TELEPHONE: *(204) 727-9695*
TELEX: *07-502721*
TOTAL RESEARCH STAFF: *3*
DEPARTMENT HEAD:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Characterization of liquid crystals by nuclear magnetic resonance study	*Ronald Y. Dong*	*45 000*	*3*	*NSERC*

COMMENTS:

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Applied Science/Civil Engineering*

ADDRESS: *2324 Main Mall*
Vancouver, British Columbia
V6T 1W5

TELEPHONE: *(604) 228-2637*
TELEX: *045-1233*
TOTAL RESEARCH STAFF: *36*
DEPARTMENT HEAD: *W.K. Oldham*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Dynamic properties of high strength, fibre reinforced cementitious composites	*Sidney Mindess (604) 228-4471*	*30 000*	*4*	*NSERC/Industry*

COMMENTS:

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *Vancouver, British Columbia*
V6T 1Y6

TELEPHONE: *(604) 228-3266*
TELEX:
TOTAL RESEARCH STAFF: *400**
DEPARTMENT HEAD: *L. Weiler*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Surface analysis of materials with modern facilities for XPS (x-ray photoelectron spectroscopy)	*K.A.R. Mitchell (604) 228-5831*	*55 000*	*5*	*NSERC*
Synthesis of liquid crystals and organic conductors	*G.S. Bates (604) 228-2834*	*20 000*	*2*	*NSERC*
Covalent polymeric coatings for surface modifications; electrostatic, wetting and macromolecular adsorption	*D.E. Brooks (604) 228-7081*	*35 000*	*2*	*MRC*
Polymers for extraction of biomaterials in downstream processing using 2 polymer aqueous 2 phase systems	*D.E. Brooks (604) 228-7081*	*66 000*	*1*	*Domtar*
Polymer derivatives for biospecific isolations using aqueous two phase polymer systems	*D.E. Brooks (604) 228-7081*	*15 000*	*1*	*MRC*
Nuclear magnetic resonance studies of resin matrices used in composites	*F.G. Herring*	*45 000*	*2 DND*	

COMMENTS: * *Including students*
continued ...

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Chemistry*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Transition metal coordination polymers	*R.C. Thompson (604) 228-4979*	*20 000*	*5*	*NSERC*
GaAs etching with laser and microwave discharge techniques	*E.A. Ogryzlo*	*16 000*	*1*	*NSERC*

COMMENTS:

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Metals and Materials Engineering*

ADDRESS: *309-6350 Stores Road*
Vancouver, British Columbia
V6T 1W5

TELEPHONE: *(604) 228-3671*
TELEX: *04-51233*
TOTAL RESEARCH STAFF: *51*
DEPARTMENT HEAD: *J.A. Lund*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Polyethylene fibre composite materials	*A. Poursartip (604) 228-3665*	*225 000*	*5*	*Allied Signal*
Hybrid composites with UHM polyethylene fibres	*E. Teghtsoonian (604) 228-0042*	*60 000*	*2*	*NSERC*
Delamination growth in CFRP laminates	*A. Poursartip (604) 228-3665*	*75 000*	*1*	*DND/DREP*
PEARL, a new polyethylene aluminum reinforced laminate	*A. Poursartip (604) 228-3665*	*50 000*	*1*	*Alcan*
Growth of crystals for the electronic industry	*F. Weinberg (604) 228-3663*		*2*	*NSERC*
Gallium arsenide - mathematical modelling of the crystal growth process	*F. Weinberg (604) 228-3663*		*1*	*Alcan/Cominco*

COMMENTS: *continued ...*

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Metals and Materials Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Dislocations in gallium arsenide deformed at high temperatures	*F. Weinberg (604) 228-3663*		*1*	*NSERC*
Crystal growth of cadmium telluride	*F. Weinberg (604) 228-3663*		*1*	*NSERC*
The relation of lattice defects and electrical characteristics in gallium arsenide	*F. Weinberg (604) 228-3663*		*1*	*G.R.E.A.T.*
The diffusion of copper and silver through gallium arsenide containing lattice defects	*F. Weinberg (604) 228-3663*		*1*	*NSERC*
Characteristics of ion implanted gallium arsenide	*F. Weinberg (604) 228-3663*		*1*	*NSERC*
Semiconductor materials research	*F. Weinberg (604) 228-3663*		*2*	*NSERC IND/ACAD.*

COMMENTS: *continued ...*

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Metals and Materials Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Synthesis of advanced ceramic powders, e.g., SiC, Si_3N_4, TiC etc.	*A.C.D. Chaklader (604) 228-2705*	*160 000*	*3*	*NSERC*
Sintering and hot-pressing of advanced ceramic powders and composites	*A.C.D. Chaklader (604) 228-2705*	*30 000*	*2*	*NSERC*
Ceramic superconductor materials (current and 1987-88)	*A.C.D. Chaklader (604) 228-2705*	*200 000*	*2*	*CTF Ltd./CUICAC*
Superelastic and strain-memory effect alloys	*L.C.Brown (604) 228-3679*	*12 000*	*2*	*NSERC*
Enhanced sintering and alloying in ferrous powder metallurgy	*J.A. Lund (604) 228-3671*	*16 000*	*2*	*NSERC*
Develop mathematical model describing microstructural evolution during cooling of plain C & low alloy steel	*Bruce Hawbolt (604) 228-3661*	*50 000*	*3*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *British Columbia*
FACULTY/DEPARTMENT: *Metals and Materials Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Electron beam processing of titanium and superalloys	*A. Mitchell (604) 228-3677*	*80 000*	*4*	*NSERC/Industry*
Solidification processing of superalloys	*A. Mitchell (604) 228-3677*	*40 000*	*4*	*NSERC/Industry*
Electron beam coating of large area substrates	*A. Mitchell (604) 228-3677*	*20 000*	*1*	*NSERC/Industry*

COMMENTS:

UNIVERSITY: *Brock*
FACULTY/DEPARTMENT: *Chemistry*

TELEPHONE: *(416) 688-5550*
TELEX:
TOTAL RESEARCH STAFF: *20*
DEPARTMENT HEAD: *J.S. Hartman*

ADDRESS: *St. Catharines, Ontario*
L2S 3A1

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Monitoring of the formation of minerals and glass ceramics by nuclear magnetic resonance spectroscopy	*J.S. Hartman (416) 688-5550*	*10 000*	*2*	*NSERC*
Structural studies on silicon carbide	*M.F. Richardson/* (416) 688-5550*	*10 000*	*2*	

COMMENTS: * *J.S. Hartman*
(416) 688-5550

UNIVERSITY: *Calgary*
FACULTY/DEPARTMENT: *Mechanical Engineering*

ADDRESS: *2500 University Drive NW*
Calgary, Alberta
T2N 1N4

TELEPHONE: *(403) 220-5771*
TELEX:
TOTAL RESEARCH STAFF: *22*
DEPARTMENT HEAD: *A. Doige*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Investigation of mechanical alloys	*W.J.D. Shaw (403) 220-5801*	*10 000*	*2*	*U of C/NSERC*
High strength carbon composite material studies	*W.J.D. Shaw (403) 220-5801*	*110 000*	*2*	*DREP/NSERC*

COMMENTS: *Low level of expenditure for mechanical alloy research does not reflect level of activity that has been and is currently under way. This area is a major activity.*

UNIVERSITY: *Carleton*
FACULTY/DEPARTMENT: *Civil Engineering*

ADDRESS: *Room 277*
Mackenzie Engineering Building
Ottawa, Ontario
K1S 5B6

TELEPHONE: *(613) 564-2802*
TELEX:
TOTAL RESEARCH STAFF: *15*
DEPARTMENT HEAD: *A.P.S. Selvadurai*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Fracture mechanics of brittle multiphase materials	*A.P.S. Selvadurai (613) 564-2802*	*20 000*	*2*	*NSERC*
Numerical modelling of fracture and interface phenomena	*A.P.S. Selvadurai (613) 564-2802*	*20 000*	*2*	*NSERC*
Transient thermoelastic fracture mechanics	*A.P.S. Selvadurai (613) 564-2802*	*23 000*	*2*	*NTC*

COMMENTS:

UNIVERSITY: *Carleton*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE: *(613) 564-6630*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *J.E. Hardy*

ADDRESS: *Ottawa, Ontario*
K1S 5B6

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Channel electron multiplier arrays (glass coatings and glass composites)	*J. Armitage*			
Plastic/polymer composites creep in light weight structures	*J. Armitage*			

COMMENTS:

UNIVERSITY: *Carleton University*
FACULTY/DEPARTMENT: *Mechanical and Aeronautical Engineering*

ADDRESS: *Ottawa, Ontario*
K1S 5B6

TELEPHONE: *(613) 564-2725*
TELEX:
TOTAL RESEARCH STAFF: *45*
DEPARTMENT HEAD: *Saravanamuttoo*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
A computer-aided system for the welding process	*M.J. Bibby*	*30 000*	*3*	*NSERC, EMR*

COMMENTS:

UNIVERSITY: *College Militaire Royal de Saint-Jean*
FACULTY/DEPARTMENT:

ADDRESS: *Groupe de recherche sur les semiconducteurs et les diélectriques*
Richelain (Québec) J0J 1R0

TELEPHONE: *(514) 346-2131*
TELEX:
TOTAL RESEARCH STAFF: *6*
DEPARTMENT HEAD: *J. Zauhar*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
One dimensional conducting organometallic and organic charge transfer and mixed valence complexes	*J. Zauhar*	*4 400*	*2*	*CRDev (DND)*
Synthesis of some novel extended pi-electron analogues of TCNQ	*J. Zauhar*	*4 500*	*1*	*CRDev (DND)*
Manufacture of solar cells (junction induced by inorganic materials)	*A. Rambo*	*3 500*	*2*	*CRDev (DND)*
Computer applications in electron paramagnetic resonance	*S. Subramanian*	*2 000*	*1*	*CRDev (DND)*

COMMENTS:

UNIVERSITY: *College Militaire Royal de Saint-Jean*
FACULTY/DEPARTMENT: *Physique*

ADDRESS: *Richelain (Québec)*
J0J 1R0

TELEPHONE: *(514) 346-2131*
TELEX:
TOTAL RESEARCH STAFF: *5*
DEPARTMENT HEAD: *André Filion*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Research on ferroelectric polymers and electrets	*M.M. Perlman (514) 346-2131 X3587*	*50 000*	*2*	*ARP/CRDev/NSERC*
Manufacturing techniques for semiconductor devices: polymer-semiconductors	*A. Filion (514) 346-2131 X3592*	*45 000*	*5*	*ARP/CRDev/NSERC*

COMMENTS:

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Electrical Engineering*

ADDRESS: *1455 de Maisonneuve Blvd. West*
Montreal, Quebec
H3G 1M8

TELEPHONE: *(514) 848-3085*
TELEX:
TOTAL RESEARCH STAFF: *2*
DEPARTMENT HEAD: *J. Hayes*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
PdGdTe new semimagnetic semiconductor with tachikinetic electrons (Liquid He mobility 10 cm /volt.s)	*B.A Lombos (514) 848-3085*	*10 000*	*5*	*
Heteroepitaxial growth of GaAs-Ge by close spaced vapour transport for IC-s and satellite solar cells	*B.A. Lombos (514) 848-3085*	*100 000*	*5*	*

COMMENTS: * *Actions-Structurants France/Quebec/NSERC*

UNIVERSITY: Concordia
FACULTY/DEPARTMENT: Mechanical Engineering

TELEPHONE: (514) 848-3131
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: M.O.M. Osman

ADDRESS: 1455, de Maisonneuve ouest
Montréal (Québec)
H3G 1M8

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Mechanical behaviour of composites & structures made of composites under different loads and environments	S.V. Hoa (514) 848-3139	400 000	10	*
High temp. mech. forming & thermomech. processing of advanced steels & nickel, aluminum & magnesium alloys	H.J. McQueen (514) 848-3145	97 000**	4	NSERC/FCAR

COMMENTS: * NSERC/FCAR/Ministry of Education of Quebec/NRC/Companies such as Bell, Canadair, etc.
** $35,000 in conjuction with Dr. J.J. Jones, McGill and $50,000 with Dr. M.G. Akben, McGill (now at University of Ottawa)

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE: *(514) 848-4802*
TELEX: *055-60504*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *C. Langford*

ADDRESS: *Centre for Building Studies*
1455 de Maisonneuve ouest
Montréal (Québec)
H3G 1M8

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
GaAs and related compounds	*B. Lombos (514) 848-3085*	*15 072*	*4*	*NSERC*
Second generation materials for energy and electronic technologies	*C. Langford (514) 848-4802*	*257 000*		*
Photochemistry, solvation and kinetics in inorganic chemistry and analysis	*C. Langford (514) 848-4802*	*41 760*	*4*	*NSERC*
Photocatalysts for waste treatment	*C. Langford (514) 848-4802*	*31 580*	*2*	*NSERC*
Molecular photovoltaic cells	*C. Langford (514) 848-4802*	*70 000*	*3*	*NSERC*
Replacement laser tube	*C. Langford (514) 848-4802*	*15 297*		*NSERC*

COMMENTS: * *Action Structurantes*
continued ...

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Sn-Sn transitions in MSnF solid electrolytes	*M. Bell (514) 848-3387*	*2 000*	*1*	*NSERC **
Low temperature Mossbauer spectroscopy of tin catalysts	*G. Denes (514) 848-3346*	*19 000*	*3*	*EMR*
Strucutural studies of stannus compounds and characterization of novel forms of ferric hydroxide	*G. Denes (514) 848-3346*	*9 600*		*NSERC*
Optical, electrical and structural properties of lanthanide-doped beta-aluminas	*G. Denes (514) 848-3346*	*1 500*		*FCAR **
Characterization of thin film II-VI semiconducting compounds grown by the gas-solid process	*M. Lawrence (514) 848-3368*	*2 250*	*1*	*NSERC **
Photoelectrochemical cells using ionic conducting polymer/II-VI semiconductor electrodes	*M. Lawrence (514) 848-3368*	*2 380*	*1*	*CASA*

COMMENTS: ** assistance with expenses*
continued ...

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Bi-component zeolite materials	*R. Le Van Mao (514) 848-3343*	*8 000*	*2*	*NSERC*
Project Gasolsyn - UP-C-616	*R. Le Van Mao (514) 848 3343*	*39 285*	*2*	*EMR*
Heterogenous photo-catalysis and inorganic photo-chemistry and photophysics	*N. Serpone (514) 848-3345*	*28 800*	*2*	*NSERC*
Synthetic, crystallographic and catalysis studies in organometallic chemistry	*P. Bird (514) 848-3343*	*19 593*	*2*	*NSERC*
Organic polymers in energy conservation	*D. Feldman (514) 848-3202*	*4 464*	*2*	*NSERC **
Polymers for energy conservation and solar energy applications	*D. Feldman (514) 848-3202*	*28 000*	*1*	*NSERC*

COMMENTS: ** assistance with portion of salary and fringe benefits*

continued ...

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
High performance liquid chromatograph	*D. Feldman (514) 848-3202*	*24 000*	*1*	*NSERC*
Mechanics of polymer composite materials and structures (equipment)	*S.V. Hoa (514) 848-3139*	*4 000*		*FCAR*
Second international symposium of acoustic emission from reinforced composites	*S.V. Hoa (514) 848-3139*	*4 000*		*FCAR*
Mechanics of polymer materials and structures	*S.V. Hoa (514) 848-3139*	*22 000*	*2*	*FCAR*
Vibration and stress analysis of elastic and visco-elastic systems under various loads and environments	*S.V. Hoa (514) 848-3139*	*27 917*	*2*	*NSERC*
Filament winding machine for fibre reinforced composites	*S.V. Hoa (514) 848-3139*	*77 717*		*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Interlaminar stresses in a tapered laminate	*S.V. Hoa (514) 848-3139*	*49 075*		*NRC*
Characteristics of glass fibers used in fiber optic helmet display	*S.V. Hoa (514) 848-3139*	*700*		
Development of non-destructive testing methods for proving and retesting low pressure FRP tankers	*S.V. Hoa (514) 848-3139*	*94 430*	*2*	*Transp. Provost*
Effect of degradation due to a fluid content on the reliability of FRP vessels and piping	*S.V. Hoa (514) 848-3139*	*63 500*	*2*	*NSERC*
Interpretation of acoustic emission signals from FRP	*S.V. Hoa (514) 848-3139*	*8 688*		*NSERC*

COMMENTS:

UNIVERSITY: *Concordia*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Variation of the functional properties of polyurethane sealants blended with polymeric modifiers	*D. Feldman (514) 848-3202*	*28 000*	*3*	*NSERC*
Improved epoxy sealant for energy conservation and solar energy applications	*D. Feldman (514) 848-3202*	*18 000*	*3*	*NSERC*
Energy storing wallboard	*P. Fazio/* (514) 848-3200*	*216 000*	*5*	*EMR/NSERC/FCAR*
Polyester concrete for thermal storage	*D. Feldman (514) 848-3202*	*10 000*	*2*	*NCERC*
Development of building products from re-cycled waste glass	*N. Low (514) 848-3200*	*18 000*	*2*	*FCAR/NSERC*
Development of mica-based composite building products	*N. Low (514) 848-3200*	*18 000*	*2*	*FCAR/NSERC*

COMMENTS: * *Feldman/Shapiro*

UNIVERSITY: *Dalhousie*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *Halifax, Nova Scotia*
B3H 4J3

TELEPHONE: *(902) 424-3334*
TELEX:
TOTAL RESEARCH STAFF: *50*
DEPARTMENT HEAD: *J.C.T. Kwak*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Improved solid ceramic electrolytes	*P.D. Pacey (902) 424-3334*	*2 000*	*1*	*NSERC*

COMMENTS:

UNIVERSITY: *Dalhousie*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Halifax, Nova Scotia*
B36 3J5

TELEPHONE: *(902) 424-2339*
TELEX: *01921863*
TOTAL RESEARCH STAFF: *18*
DEPARTMENT HEAD: *D.J.W. Geldart*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Fibre optic sensors, integrated optic components, fibre optic sensor bus	*B.E. Paton (902) 424-2342*	*40 000*	*4*	*NSERC, industry*
High critical temperature superconducting ceramics	*M.H. Jericho (902) 424-2316*	*20 000*	*3*	*NSERC*
Intercalation batteries	*M.H. Jericho/* (902) 424-2316*	*20 000*	*2*	*NSERC*
Amorphous transition metal alloys	*R.A. Dunlap (902) 424-2394*	*24 000*	*3*	*NSERC/Dalhousie*
Rapidly quenched Al-transition metal alloys	*R.A. Dunlap (902) 424-2394* 494	*67 000*	*5*	*NSERC/ALCAN*

COMMENTS: * *A.M. Simpson*
(902) 424-2320

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie chimique*

ADDRESS: *Case postale 6079, succ. A*
Montréal (Québec)
H3C 3A7

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *C. Chavarie*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Extrusion of plastics	*P.J. Carreau (514) 340-4924*	*-420 000*	* *8*	*NSERC/FCAR*
Mechanical and flow properties of charged polymers and liquid cristals	*P.J. Carreau (514) 340-4924*	*- 60 000*	*6*	*NSERC/FCAR*
Interfacing and adhesion properties of charged polymer systems	*H.P. Schreiber (514) 340-4937*	*-120 000*	*7*	*NSERC*
Cellulose materials	*S. Sapieha (514) 340-4848*	*40 000*	*2*	**
Copolymerization	*P. Bataille (514) 340-4524*	*30 000*	*3*	*FCAR/NSERC*

COMMENTS: * *Includes $ 300 000 for equipment*
** *NSERC/Pulp and Paper Institut*

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie mécanique*

ADDRESS: *Case postale 6079, Succ. A*
Montréal (Québec)
H3C 3A7

TELEPHONE: *(514) 340-4757*
TELEX: *05-2146*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *Charles Laberge*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Evaluation of test methods for asbestos replacement gaskets	*A. Bazergui (514) 340-4857*	*~100 000*	*3*	*
Evaluated temperature behavior of gasket materials	*A. Bazergui (514) 340-4857*	*~40 000*	*3*	**
Creep/fatigue behaviour of high temperature materials	*T. Bui-Quoc (514) 340-4859*	*47 000*	*2*	*NSERC*
Low cycle fatigue and creep-fatigue of titanium alloys at high temperature	*T. Bui-Quoc (514) 340-4859*	*62 000*	*2*	*Pratt & Whitney*
Fatigue resistance of weld joints of superalloys and stainless steel at high termperatures	*T. Bui-Quoc (514) 4859*	*55 000*	*2*	*Pratt & Whitney*
Study of static, thermal and repeated stress with respect to pressure vessels	*A. Bazergui (514) 340-4857*	*30 000*	*5*	*FCAR*

COMMENTS: * *Materials Technology Institute (of the Chemical Process Industries), U.S.A.*
** *Pressure Vessel Research Committee, U.S.A.*
continued ...

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie mécanique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Microwave heating of thermoplastics	*Raymond Gauvin (514) 340-4588*	*50 000*	*1*	*NSERC/FCAR/ROBCO*
Resin transfer modelling of moulding	*Raymond Gauvin (514) 340-4588*	*25 000*	*1*	*FCAR*
Fatigue properties of glass/epoxy composites	*Raymond Gauvin (514) 340-4588*	*30 000*	*1*	*
Structures and properties of thermoplastic-matrix composites	*Bo Fisa (514) 340-4317*	*20 000*	*1*	*NSERC*

COMMENTS: * *FCAR/Bell Helicopter/Textron Canada*

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie métallurgique*

ADDRESS: *Case postale 6070, Succ. A*
Montréal (Québec)
H3C 3A7

TELEPHONE: *(514) 340-4787*
TELEX: *05-24146*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *Jean-Marie Dorlot*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Service behaviour of metallic and ceramic materials	*J. Ivan Dickson (514) 340-4963*	*150 000*	*4*	*MESST (Québec)*
Wear of alumina bearing surfaces (hip implants)	*Jean-Marie Dorlot (514) 340-4787*	*15 000*	*2*	*NSERC*
Manufacture and characterization of porous silicon (VLSI)	*Gilles L'Esperance (514) 340-4532*	*17 000*	*2*	*NRC*
Development of metallic composites by powder metallurgy and HIP	*Gilles L'Esperance (514) 340-4532*	*25 000*	*2*	*NRC*
Characterization of Al-Zn alloys produced in the semi-liquid state	*Gilles L'Esperance (514) 340-4532*	*7 000*	*1*	*NRC*
Characterization of damage to and regeneration of super-alloy turbine blades	*Gilles L'Esperance (514) 340-4532*	*30 000*	*3*	*NRC*

COMMENTS: *continued ...*

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie métallurgique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Machinability of steel parts manufactured by powder metallurgy	*Gilles L'Esperance (514) 340-4532*	*15 000*	*3*	*Industry*
Rapid solidification of Al-Li alloys	*Gilles L'Esperance (514) 340-4532*	*15 000*	*2*	*NSERC*
Development and characterization of alloys highly resistant to cavitation	*Gilles L'Esperance (514) 340-4532*	*25 000*	*3*	*IREQ*
Solid electrolyte (ceramics) electrochemical probes	*Arthur Pelton (514) 340-4531*	*200 000*	*3*	*NSERC/Alcan*
Manufacture of solid electrolyte and slip-cast ceramic tubes and crucibles	*Arthur Pelton (514) 34-4531*	*25 000*	*2*	*NSERC*
Toughening of zirconium-oxide-based ceramics	*Michel Rigaud (514) 340-4253*	*60 000*	*3*	*NRC*

COMMENTS: *continued ...*

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie métallurgique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Aluminas reinforced with partially stabilized zirconium oxide	*Michel Rigaud (514) 340-4253*	*25 000*	*3*	*NSERC*
Study of the brittleness of carbon	*Michel Rigaud (514) 340-4253*	*37 000*	*2*	*Alcan*
Mechanical, physical and chemical aspects of the dirability of bonded aluminum joints	*Yves Verreman (514) 340-4044*	*27 000*	*2*	*Alcan*

COMMENTS:

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie physique*

ADDRESS: *Section physique du solide*
Case Postale 6079, Succ. A
Montreal (Quebec)
H3C 3A7

TELEPHONE: *(514) 340-4261*
TELEX: *05-24146*
TOTAL RESEARCH STAFF: *20*
DEPARTMENT HEAD: *Guy Faucher*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Compound semiconductors	*J. Currie (514) 340-4576*	*150 000*	*5*	*FCAR/NSERC*
Polymers and composites	*A. Yelon (514) 340-4751*	*75 000*	*2*	*NSERC*
Insulators - plasma	*M. Wertheimer (514) 340-4749*	*100 000*	*5*	*NSERC*
Amorphous semiconductors	*M. Meunier (514) 340-4971*	*200 000*	*4*	*MER*
High temperature superconductors	*A. Yelon (514) 340-4751*	*50 000*	*2*	*FCAR/NSERC*
Plasma deposition	*M Wertheimer (514) 340-4749*	*50 000*	*3*	*FCAR/NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie physique*

ADDRESS: *Section Optique*
Case Postale 6079, Succ. A
Montreal (Quebec)
H3C 3A7

TELEPHONE: *(514) 340-4421*
TELEX: *05-24146*
TOTAL RESEARCH STAFF: *4*
DEPARTMENT HEAD: *Guy Faucher*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Semiconductor lasers	*R. Maciejko (514) 340-4421*		*4*	*NSERC*
GaAs optical guides	*R. Maciejko (514) 340-4421*		*1*	*NSERC*
Doped-glass optical guides	*R. Maciejko (514) 340-4421*		*1*	*NSERC*
Manufacture of optical waveguides by ionic diffusion in glass	*J. Lapierre (514) 340-4793*	*50 000*	*4*	*NSERC*

COMMENTS:

UNIVERSITY: *Ecole Polytechnique*
FACULTY/DEPARTMENT: *Génie physique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Plasma etching	*M. Wertheimer (514) 340-4751*	*50 000*	*3*	*FCAR/NSERC*
Ion implantation	*A. Yelon (514) 340-4751*	*50 000*	*2*	*FCAR*
Transitory infrared requits	*J. Currie (514) 340-4576*	*20 000*	*1*	*FCAR*
MOCVD (Metallo-organic chemical vapour deposition)	*J.Currie (514) 340-4576*	*200 000*	*3*	*FCAR/NSERC*
Microlithography useing X-rays and partical beams	*J. Currie (514) 340-4576*	*50 000*	*3*	*FCAR*
Integrated circuit manufacturing processes	*J. Currie (514) 340-4576*	*50 000*	*5*	

COMMENTS:

UNIVERSITY: *Laval*
FACULTY/DEPARTMENT: *Physique*

ADDRESS: *Laboratoire de Recherches en Optique et Laser (LROL)*
Ste-Foy (Québec)
G1K 7P4

TELEPHONE: *(418) 656-2454*
TELEX: *051-31621*
TOTAL RESEARCH STAFF: *60*
DEPARTMENT HEAD: *H.H. Arsenault*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Study of the effects of ion implantation on the optical properties of photorefractive materials	*Lessard/Galarneau/ Knystautas*	*	*6*	*NSERC*
Study of the dependence of the optical properties of chalcognide glass on its stoichimoetry	*Galarneau/Lessard*	*	*4*	*NSERC*
Study of the possibility of using ion implantation to produce optical components	*Galarneau/Lessard/ Knystautas*	*	*5*	*NSERC*
Non-linear optical properties of semiconductor-doped polymers	*Galarneau/Roberge/ Lessard*	*	*4*	*NSERC*
Use of organic-azo-molecule-dyed polymers as holographic recording mediums	*Lessard*	*	*3*	*NSERC*
Sensitizing of photoresins to red	*Lessard*	*	*3*	*FCAR*

COMMENTS: ** $ 70 000 TOTAL*

continued ...

UNIVERSITY: *Laval*
FACULTY/DEPARTMENT: *Physique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Sensitization of dichromate geletins to red	*Lessard*	*	*2*	*Contrats*
Addition of hard sandstone molecules to polymers in order to create holographic recording mediums	*Lessard*	*	*3*	
Study of metal hardening by ion implantation	*Knystautas*	*25 000*	*3*	*NSERC*
Research into thin composite layers and their applications	*G. Boivin*	*10 560*	*3*	*NSERC*
All-optical waveguiding bistable device formed in semiconductor-doped glass	*R. Tremblay*	*108 000***	*5*	*NSERC*
Optical nonlinear interactions in guided wave structures based on semiconductor-doped glass	*H. Jerominek*	*60 000***	*4*	*NSERC*

COMMENTS: * *Included in the $ 70 000 of the preceeding page*
** *for three years*
continued ...

UNIVERSITY: *Laval*
FACULTY/DEPARTMENT: *Physique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-ANPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Improvement of the quality of a semiconductor laser output beam	*N. McCarthy*		*4*	*NSERC*
Laser propagation in large scale laser isotope separation and chemistry	*S.L. Chin*	*40 000*	*3*	*NSERC*

COMMENTS:

UNIVERSITY: *Laval*
FACULTY/DEPARTMENT: *Science et genie*

ADDRESS: *Centre de recherche en ingenierie des macromolecules*
Pavillon Vachon
Québec (Québec) G1K 7P4

TELEPHONE: *(418) 656-5343*
TELEX:
TOTAL RESEARCH STAFF: *50*
DEPARTMENT HEAD: *Robert E. Prud'homme*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Synthesis and properties of condicting polymers	*R.E. Prud'homme (418) 656-3683*	*30 000*	*3*	*NSERC/FCAR*
Polymer blends and alloys	*R.E. Prud'homme (418) 656-3683*	*100 000*	*10*	*
Orientation phenomena, injection moulding	*A. Ait-Kadi 656-5222 L. Choplin 656-3566*	*200 000*	*10*	**
Ionomer properties	*C.G. Bazuin (418) 656-2188*	*30 000*	*2*	*NSERC/FCAR*
Liquid cristals	*G. Charlet (418) 656-5113*	*30 000*	*2*	*NSERC/FCAR*
Polymer composites	*J. Leonard 656-3086 L. Choplin 656-3566*	*50 000*	*4* **	

COMMENTS: * *NSERC/FCAR/Min. Defense, Polysar*
** *NSERC/FCAR/Min. Sciences et technologie*
continued ...

UNIVERSITY: *Laval*
FACULTY/DEPARTMENT: *Sciences et genie*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Synthesis and properties of thermosetting polymers	*B. Riedl (418) 656-2437*	*30 000*	*2*	*NSERC*
Computer assisted design of forming processes	*Ph. Tanguy (418) 656-3565*	*20 000*	*10*	*

COMMENTS: * *NSERC/Min. Sciences et technologie/Control Data*

UNIVERSITY: Manitoba
FACULTY/DEPARTMENT: Electrical Engineering

ADDRESS: Winnipeg, Manitoba
R3T 2N2

TELEPHONE: (204) 474-9603
TELEX: 07587721
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: L.S. Shafai

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Microwave plasma deposition and etching for VLSI	H.C. Card (204) 474-8521		10	NSERC

COMMENTS:

UNIVERSITY: McGill
FACULTY/DEPARTMENT: Chemistry

ADDRESS: 801 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

TELEPHONE: (514) 398-6940
TELEX: 05-5268510
TOTAL RESEARCH STAFF: 200
DEPARTMENT HEAD: T.H. Chan

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Miscibility enhancement in polymer blends via ionic interactions	A. Eisenberg (514) 398-6934	100 000	5	Governments*
Synthesis and chemistry of polysilanes	J.F. Harrod (514) 398-6911	60 000	4	"
Cellulose derivatives as liquid crystals	D.G. Gray (514) 398-6182	40 000	5	Governments**
Polymeric adsorbents for biosubstances	G.R. Brown 398-6926 L.E. St-Pierre -6914	125 000	8	NSERC/FCAR
Gas permeation of polymer blends	G.R. Brown (514) 398-6926	15 000	1	NSERC/FCAR
Synthesis and properties of polysilanes	J.F. Harrod (514) 398-6911	60 000		NSERC/FCAR

COMMENTS: * of Canada, Quebec and U.S.A.
** of Canada and Quebec
continued ...

UNIVERSITY: McGill
FACULTY/DEPARTMENT: Chemistry

ADDRESS: Pulp and Paper Building
3420 University Street
Montreal, Quebec
H3A 2A7

TELEPHONE: (514) 398-6190
TELEX: 05-821541
TOTAL RESEARCH STAFF: 3
DEPARTMENT HEAD: T.H. Chan

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Synthetic and Bio polymers for imaging applications	R.H. Marchessault	100 000	3	NSERC/Xerox
Surface characterization of carbon fibres	D.G. Gray (514) 398-6182	15 000	1	CRASP
Cholesteric liquid crystalline polymers	D.G. Gray (514) 398-6182	30 000	3	NSERC

COMMENTS:

UNIVERSITY: McGill
FACULTY/DEPARTMENT: Mechanical Engineering

TELEPHONE: (514) 398-6305
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: J.W. Ahmed

ADDRESS: Fracture Control Lab
817 Sherbrooke Street West
Montreal, Quebec
H3A 2K6

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Fracture, fatigue and reliability characteristics of advanced metals	J.W. Provan (514) 398-6305	34 000	2	NSERC

COMMENTS:

UNIVERSITY: McGill
FACULTY/DEPARTMENT: Mining & Metallurgical Engineering

TELEPHONE: (514) 398-4372
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS: 3450 University Street
Montreal, Quebec
H3A 2A7

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Microstructure and magnetic properties of NdFeB magnets	J.A. Szpunar (514) 398-4372		1	NSERC
Development and processing of high Tc superconducting ceramics	J.A. Szpunar (514) 398-4372		1	NSERC
Metal/ceramic joining	R.A.L. Drew (514) 398-4581	50 000	2	Pratt & Whitney
Development of Si_3N_4 Ceramics	R.A.L. Drew (514) 398-4581	150 000	4	Alcan/NSERC
Study of different milling techniques for Al_2O_3	R.A.L. Drew (514) 398-4581	40 000	2	NSERC/Alcan
Fabrication of Si_3N_4 valve discs	R.A.L. Drew (514) 398-4581	14 000	1	NRC/DSS

COMMENTS: continued ...

UNIVERSITY: *McGill*
FACULTY/DEPARTMENT: *Mining & Metallurgical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Development of mixed oxide superconducting ceramics	*R.A.L. Drew (514) 398-4581*	*80 000*	*1*	*NSERC**

COMMENTS: * *applied for*

UNIVERSITY: McGill
FACULTY/DEPARTMENT: Science/Physics

ADDRESS: 3600 University Street
Montreal, Quebec
H3A 2T8

TELEPHONE: (514) 398-6483
TELEX:
TOTAL RESEARCH STAFF: 70
DEPARTMENT HEAD: S.K. Mark

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
MOCVD of compound semiconductors and devices	David Walsh (514) 398-6538	200 000	10	*
Rapidly quenched metals (application to permanent magnets and to highly permeable magnetic material)	J. Strom-Olsen (514) 398-6527	300 000	16	*

COMMENTS: * NSERC/Quebec/Industry

UNIVERSITY: McMaster
FACULTY/DEPARTMENT: Chemical Engineering

ADDRESS: Institute for Polymer
Production Technology
Main Street West
Hamilton, Ontario L8S 4L7

TELEPHONE: (416) 523-1643
TELEX: 061-8347
TOTAL RESEARCH STAFF: 25
DEPARTMENT HEAD: A.E. Hamielec

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Development of crosslinking technology	A.E. Hamielec (416) 523-1643	250 000	8	*
Reactive processing	A.E. Hamielec	300 000	10	*

COMMENTS: * NSERC and Institute for Polymer Production Technology (MIPPT)

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS: *1280 Main Street West*
Hamilton, Ontario
L8S 4L7

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Glass: coatings, composites, seals, electrical conduction, biomedical, optical fibre, mechanical	*G.P. Johari ext. 4941*		*5*	*NSERC*
Metals: amorphous metals, alloys, rapid-quenched metals, superconductors	*G.P. Johari ext. 4941*		*2*	*NSERC*
Polymers: composites, conductive, blends, mechanical	*G.P. Johari ext. 4941*		*2*	*
High temperature oxidation and sulfidation of alloys: superalloys and steels	*W.W. Smeltzer*	*67 000*	*5*	*NSERC*
Deuterium and tritium diffusion and permeation barriers	*D.P. Thompson*	*103 000*	*6*	*CFFTP*
Tritium diffusion and permeation barrier technology	*W.W. Smeltzer*	*50 000*	*2*	*NSERC*

COMMENTS: * *Forschungs-forderuugsfongs, Austria; CNRS, France*
continued ...

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Surface acoustic wave devices for communications signal processing	*C.K. Campbell*	*50 000*	*5*	*NSERC*
Doped diamond thin film plasma processing	*A. Bereziu*	*100 000*	*4*	*NSERC*
Silicone carbide and nitride powder production by thermal plasma processing	*J.S. Chang*	*160 000*	*4*	*Ontario Hydro*
Amorphous silicon doped with deuterium and tritium thin film plasma processing	*A.A. Beraziu*	*100 000*	*4*	*NSERC*
Plasma assisted iron making	*J.S. Chang*	*250 000*	*8*	*NSERC/Ont. Hydro*
Titanium nitride and titanium carbide thin film plasma processing	*J.S. Change*	*40 000*	*3*	*NSERC/Ont. Hydro*

COMMENTS: *continued ...*

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Application of Moessbauer Spectroscopy to the study of new inorganic materials	*T. Birchall11 Ext 3307*	*46 000*	*5*	*NSERC*
Structure-property relationships in inorganic solids	*J.E. Greedan Ext 4725*	*42 000*	*3*	*NSERC*
High Tc oxide superconductors	*J.E. Greedan*	*150 000*	*10*	*NSERC*
ZnSiMn thin films for electroluminescent devices	*A.H. Kitai Ext 4973*	*50 000*	*4*	*NSERC/EMR/SERB/**
Transmission electron microscopy of semiconductors	*Piery Ext 4978*	*15 000*	*1*	
Rapid solidification microstructures	*Piery Ext 4978*	*15 470*	*1*	

COMMENTS: * *Ontario Government*
continued ...

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Design of clean steel for high strain-rate machining HSLA STEELS - microalloying of medium carbon steels	*S.V. Subrammanian Ext 4854*	*260 000*	*5*	*
Line pipe steels - solidification analysis and precipitation evolution in concast slabs - X-80 grade	*G.R. Purdy Ext 4854*	*45 000*	*3*	*NSERC*
Compacted graphite iron	*S.V. Subrammanian Ext 4854*			
Microscopic theories of superconductors	*J.P. Curbotte Ext 3177*	*46 600*	*4*	*NSERC*
High Tc oxides superconductor	*J.P. Curbotte Ext 3177*	*79 900*	*6*	*NSERC*
III-V and II-VI semiconductor processing: ion implantation and rapid thermal anneals	*D.A. Thompson Ext 4932*	*50 000*	*4*	*NSERC*

COMMENTS: * *CANMET/URIF/Stelco/Atlas/Lasco/Algoma*

continued ...

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Strained layer superlatices: III-V semiconductors; Ge/Si alloys; and Pb-salts	*D.A. Thompson Ext 4932*	*100 000*	*7*	*NSERC*
Optical waveguides and integrated optics	*P.E. Jessop Ext 4928*	*50 000*	*4*	*NSERC*
H - permeation coatings	*D.A. Thompson Ext 4932*	*150 000*	*5*	*NSERC/CFFTP*
Electron-yield EXAFS of implanted III-V semiconductors	*A.P. Hitchcock Ext 4749*		*3*	*NSERC/OCMR*
Electron-yield EXAFS of Mn-diffused ZnS high performance phosphors	*A.P. Hitchcock Ext 4749*		*3*	*NSERC*
Electron energy loss spectroscopy of the monomers of conducting polymers	*A.P. Hitchcock Ext 4749*		*2*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *McMaster*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Transition metal nitride films: preparation methods characterization	*P.T. Dawson X 4717*		*3*	*NSERC*
Phase transformation in engineering materials	*G.R. Purdy*	*40 000*	*4*	*NSERC*
Solidification processing of line pipe steel	*G.R. Purdy*	*45 000*	*4*	*NSERC*
Thermodynamics and kinetics of high strength-low alloy steels	*J.S. Kisbaldy X 4983*	*40 000*	*3*	*NSERC*

COMMENTS: * *J. Garbotte/ T. Timusk/ C.V. Stager*

UNIVERSITY: *McMaster University*
FACULTY/DEPARTMENT: *Institute for Materials Research*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-ANPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Steam electrolysis fuel cell based on polycrystalline H_3O^+- / "-Al_2O_3	*Nicholson X4977*	*254 000*	*	*DND/Ont. Hydro*
Development and characterization of high performance ceramics	*Nicholson X4977*	*94 037*		*NSERC/URIF*
Toughening and strengthening of high performance ceramics	*Nicholson X4977*	*10 000*		*EMR*
Synthesis of textured AlN polycrystals for high frequency transducers	*Nicholson X4977*	*63 000*		*NSERC*
The characterization and improvement of $H_3O^+B"/B$-Al_2O_3 electrolytes	*Nicholson X4977*	*50 000*		*NSERC*
Impedance analyser	*Nicholson X4977*	*28 952*		*NSERC*

COMMENTS: * *16 in Nicholson Ceramic Engineering Research Group*

continued ...

UNIVERSITY: *Memorial University of Newfoundland*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *St. John's, Newfoundland*
A1B 3X7

TELEPHONE: *(709) 737-8773*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *J.N. Bridson*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Preparation and characterization of porous polypyrrole based films	*P.G. Pickup (709) 737-8657*	*22 000*	*2*	*NSERC*
Alumina membrane fabrication	*F.R. Smith (709) 737-8765*	*10 500*	*2*	*Seabright Corp.*

COMMENTS:

UNIVERSITY: *Moncton*
FACULTY/DEPARTMENT: *Ecole de genie*

ADDRESS: *Moncton (Nouveau Brunswick)*
E1A 3E9

TELEPHONE: *(506) 858-4309*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *N.K. Srivastava*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Fracture criteria for composite materials	*Pierre Labossiere*	*14 000*	*1*	*NSERC*

COMMENTS:

UNIVERSITY: *New Brunswick*
FACULTY/DEPARTMENT: *Mechanical Engineering*

ADDRESS: *P.O. Box 4400*
Fredericton, New Brunswick
E3B 5A3

TELEPHONE: *(506) 453-4513*
TELEX: *014-46-202*
TOTAL RESEARCH STAFF: *12**
DEPARTMENT HEAD: *D.J. Bonham*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Thermo-mechanical processing of microalloyed steels	*J.G. Lenard (506) 453-4513*	*70 000*	*5*	****
Ignition threshold of cork composites	*A.C.M. Sousa (506) 453-4513*	*30 000*	*3*	*EEC*
Mathematical models of wear using materials from the nuclear industry	*R.J. Rogers (506) 453-4513*		*1*	*AECL/NSERC*
Thermal contact conductance of metals	*J.E.S. Venart (506) 453-4513*	*15 000*	*1*	*AECL/NSERC*

COMMENTS: * *+ 12 Graduate students*
** *NSERC/NATO/Algoma Steel*

UNIVERSITY: *Ottawa*
FACULTY/DEPARTMENT: *Mechanical Engineering*

ADDRESS: *770 King Edward Avenue*
Ottawa, Ontario
K1N 6N5

TELEPHONE: *(613) 564-5700*
TELEX: *0533338*
TOTAL RESEARCH STAFF: *
DEPARTMENT HEAD: *S. Tavoularis*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Mechanical response of composite materials with randomly oriented short fibres	*Y.M. Haddad (613) 564-3373*	*65 424*	*2*	*NSERC*
Rheology and fracture of randomly structured fibrous systems	*Y.M. Haddad (613) 564-3373*	*52 344*	*2*	*NSERC*
Characterization of adhesive bonded joints using acousto-ultrasonic techniques	*Y.M. Haddad (613) 564-3373*	*23 400*	*3*	*NRC*
Micromechanical characterization of load bearing fibre composite laminates	*Y.M. Haddad (613) 564-3373*	*18 932*	*1*	**
Formability of metals - plastic flow and ductile fracture	*Y.M. Haddad (613) 564-3373*	*3 000*	*1*	**
Constitute laws of time and temperature dependent plastic deformation and of subcritical crack growth	*A.S. Krausz (613) 564-3275*	*28 000*	*5*	*NSERC*

COMMENTS: * *17 Professors, 1 Adjunct Professor, 5 PDF/Research Associates*
34 graduate thesis students
** *Ontario Ministry of Colleges and Universities*
continued ...

UNIVERSITY: *Ottawa*
FACULTY/DEPARTMENT: *Mechanical Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Automated filament winding of fibre composite components by conventional and robotic winding systems	*M. Munro (613) 564-2944*	*25 000*	*2*	*NSERC*
Fibre composite pressure vessels for ultra-high internal pressure applications	*M. Munro (613) 564-2944*	*225 900**	*2*	*DND/DSS*
Mechanical properties of fibre composites	*M. Munro (613) 564-2944*	*59 700***	*2*	*NSERC*

COMMENTS: * *1983-1988*
** *1985-1988*

UNIVERSITY: *Ottawa*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Ottawa, Ontario*
K1N 9B4

TELEPHONE: *(613) 564-3356*
TELEX:
TOTAL RESEARCH STAFF: *15*
DEPARTMENT HEAD: *R.C. Smith*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Tailoring Invar Characteristics in Fe-Ni - the role of alpha-iron precipitation	*D.G. Rancourt (613) 564-8279*	*	*2*	*NSERC*
Electron irradiation as a means of attaining equilibrium phase separation in quenched alloys	*D.G. Rancourt (613) 564-8279*	*	*2*	*NSERC*
Magnetic characterization of new graphite intercalation compounds	*D.G. Rancourt (613) 564-8279*	*	*2*	*NSERC*

COMMENTS: * *$20 000 total for all three projects*
Main experimental probes - Mossbauer Effect Spectroscopy (MES) and Conversion Electron Mossbauer Spect. (CEMS), MES for bulk studies and CEMS for surface studies.

UNIVERSITY: *Queen's*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *Kingston, Ontario*
K7L 3N6

TELEPHONE: *(613) 545-2612*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *V.H. Smith*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Modification of polyolefins by grafting	*K.E. Russell (613) 545-2612*	*40 000*	*2*	*Du Pont/URIF*
Sonar acceptor couplers in polymer chemistry	*A. Natanshu (613) 545-2008*	*15 000*	*1*	*Queen's*
Coupling reactive polymers	*W. Baker (613) 545-2621*	*55 000*	*2*	*NSERC/Industry*
Modifying polymers for alloying	*W. Baker (613) 545-2621*	*33 000*	*1*	*NSERC/URIF*
Novel processing techniques for polymer compounds and composites	*W. Baker (613) 545-2621*	*27 000*	*1*	*NSERC/Industry*

COMMENTS:

UNIVERSITY: *Queen's*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Stirling Hall*
Kingston, Ontario
K7L 3N6

TELEPHONE: *(613) 545-2706*
TELEX:
TOTAL RESEARCH STAFF: *~75*
DEPARTMENT HEAD: *H.M. Love*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Composite piezoelectrics	*M. Sayer (613) 545-2693*	*16 000*	*2*	*Almax Industries*
Oxide films	*M. Sayer (613) 545-2693*	*75 550*	*3*	*NSERC/Almax*
High Tc superconductors	*M. Sayer (613) 545-2693*	*10 000*	*1*	*Ontario Hydro*
Thermoelectric power generation using beta-alumina	*M. Sayer (613) 545-2693*	*9 000*	*1*	*CANMET*
Interfaces on ceramics and oxides	*M. Sayer (613) 545-2693*	*36 560*	*2*	*NSERC*
Ohmic contact fabrication	*P.J. Scanlon (613) 545-2696*	*24 000*	*3*	*Northern Telecom*

COMMENTS: *continued ...*

UNIVERSITY: *Queen's*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Ion implants in silicon	*P.J. Scanlon (613) 545-2696*	*10 000*	*3*	*Northern Telecom*
Ion beam analysis of materials	*J.L. Whitton (613) 545-2697*	*30 000*	*4*	*Ontario Hydro*
Ion beam modification of materials	*J.L. Whitton (613) 545-2697*	*15 000*	*4*	*NSERC*

COMMENTS:

UNIVERSITY: *Québec*
FACULTY/DEPARTMENT: *Centre de recherche en pates et papiers*

ADDRESS: *C.P. 500*
Trois-Rivières (Québec)
G9A 5H7

TELEPHONE: *(819) 376-5075*
TELEX: *05131623*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *H. Lavallée*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Wood fibre reinforced thermoplastic polymer composites	*Bohuslav V. Kokta (819) 376-5075*	*209 000*	*7*	*NSERC/ **
New lignin products by means of copolymerization with vinyl monomers	*Rubie Chen (819) 376-5075*	*17 280*	*2*	*NSERC*

COMMENTS: *Other funding sources: FCAR/CQBV/CMRF/ESSO/MSTQ*

UNIVERSITY: *Québec à Chicoutimi*
FACULTY/DEPARTMENT: *Science appliquées*

ADDRESS:
555, boul. de l'Université
Chicoutimi (Québec)
G7H 2B1

TELEPHONE: *(418) 545-5200*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *René Chouinard*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Metals, polymers	*Paul Meubus (418) 545-5232*	*110 000*	*2*	*NSERC/EMR*

COMMENTS:

UNIVERSITY: *Québec à Montréal*
FACULTY/DEPARTMENT: *Chimie*

TELEPHONE: *(514) 282-3000*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS: *C.P. 8888, Succ. A*
Montréal (Québec)
H3C 3P8

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Electrodepostion of aluminum alloys from organic electrolyte, preparation of new catalysts	*Guido Capuano (514) 282-8225*	*70 000*	*3*	*NSERC/FCAR*
Chemically modified electrodes, biosensors, electrocatalysis	*Daniel Belanger (514) 282-3909*	*81 000*	*3*	*NSERC/FCAR/UQAM*
Biosensors	*Guy Fortier (514) 282-4455*	*5 000*	*2*	*NSERC/UQAM*

COMMENTS:

UNIVERSITY: *Québec à Rimouski*
FACULTY/DEPARTMENT: *Groupe Regional de Support aux PME*

TELEPHONE: *(418) 724-1723*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS: *UQAR*
300 des Ursulines
Rimouski (Québec)

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
New spherical sheet-metal-forming technology	*Jean-Louis Chaumel*	*300 000*	*3*	*

COMMENTS: * *OPDQ, CNRC, UQAR, private partners*

UNIVERSITY: *Saskatchewan*
FACULTY/DEPARTMENT: *Electrical Engineering*

ADDRESS: *Saskatoon, Saskatchewan*
S7N 0W0

TELEPHONE: *(306) 966-5379*
TELEX: *074-2659*
TOTAL RESEARCH STAFF: *18*
DEPARTMENT HEAD: *R.J. Fleming*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Preparation and characterization of electrophotographic photoreceptor films	*S.O. Kasap (306) 966-5390*	*18 000*	*2*	*NSERC*

COMMENTS: *Study of new alloys and materials for use in electrophotography. Modifying or replacing a-Se.*

UNIVERSITY: *Sherbrooke*
FACULTY/DEPARTMENT: *Génie chimique*

ADDRESS: *Groupe de recherche sur la Technologie des plasmas thermiques*
Sherbrooke (Québec) J1K 2R1

TELEPHONE: *(819) 821-7168*
TELEX: *05-836149*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Design and development of d.c. and h.f. plasma torches and transferred arc furnaces	*Maher Boulos (819) 821-7168*	*500 000*	*20*	*NSERC/FCAR*
Spheroidization of refractory powders				*MESST/EMR*
Disposition of protective layers by plasma spraying at atmospheric pressure and at reduced pressure				*IREQ/ALCAN*
Smelting and deposition of superalloys for formation and deposit and/or structural parts				*CHEVRON/GE/PEC*
Preparation of ultrafine metal (Fe), alloy (Al/Cu) and ceramic (SiC et Si_3N_4) powders				*PECHINEY*

COMMENTS: *continued ...*

UNIVERSITY: *Sherbrooke*
FACULTY/DEPARTMENT: *Génie chimique*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Splitting, characterization and applications of plant macromolecules *- Microfibrillar cellulose fibres* *- Lignin and derivatives* *- Humic polymers*	*Esteban Chornet (819) 821-7170*	*300 000*	*10*	*NSERC/FCAR/CQVB*

COMMENTS:

UNIVERSITY: *Sherbrooke*
FACULTY/DEPARTMENT: *Génie civil*

ADDRESS: *Sherbrooke (Québec)*
J1K 2R1

TELEPHONE: *(819) 821-0711*
TELEX: *05 836 149*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *Pierre Lemieux*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
High-performence cement	*P. Aitcin (819) 821-7117*	*78 560*	*5*	*
New superplasticizing agent for concrete	*P. Aitcin (819) 821-7117*	*75 000*	*5*	**
Liquid concrete to seal highly toxic nuclear waste storage sites	*P. Aitcin/*** (819) 821-7117*	*158 142*	*10*	*EACL*
Liquid concrete to seal anchorages in frozen rock	*P. Aitcin/*** (819) 821-7117*	*50 000*	*5*	*Hydro Quebec*
Thin resurfacing slabs of steel-fibre-reinforced concrete	*P. Aitcin/**** (819) 821-7117*	*159 740*	*10*	*****
Evaluation of treated glass fibres in Portland-cement-based products	*P. Aitcin (819) 821-7117*	*57 900*	*4*	*Fibres Armtex*

COMMENTS:
* *CRSNG-COOP-Ciment Canada Lafarge*
** *CRSNG-COOP Handy Chemical*
*** *Gerard Ballivy (819) 821-7115*
**** *Claude Lupien (819) 821-7113*
***** *Ministere des Transports du Quebec*

UNIVERSITY: *Sherbrooke*
FACULTY/DEPARTMENT: *Génie mécanique*

ADDRESS: *2500, boul Université*
Sherbrooke (Québec)
J1K 2R1

TELEPHONE: *(819) 821-7144*
TELEX: *05-836149*
TOTAL RESEARCH STAFF: *12*
DEPARTMENT HEAD: *M. Massoud*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Analysis and control of structures made of carbon or glass fibre-reinforced epoxy	*Clermont Roy (819) 821-7155*	*150 000*	*8*	*
Hot plasma technology for fabrication of ceramic and amorphous metallic coating	*Clermont Roy (819) 821-7155*	*35 000*	*3*	*EMR/NRC*
Production of ultra fine powders	*Maher Boulos (819) 821-3178*	*150 000*	*10*	*American Cos.*

COMMENTS: * *NSERC/NRC/Canadair*

UNIVERSITY: *Simon Fraser*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *Burnaby, British Columbia*
V5A 1S6

TELEPHONE: *(604) 291-4884*
TELEX:
TOTAL RESEARCH STAFF: *67*
DEPARTMENT HEAD: *Colin H.W. Jones*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Mossbauer studies of metal chalcogenide/lithium batteries	*C.H.W. Jones (604) 291-4884*	*20 000*	*2*	*NSERC & SCBC**
Electrically conducting polymers	*B.L. Funt (604) 291-3344*	*25 000*	*4*	*NSERC*
Superconductors	*L.K. Peterson (604) 291-3348*	*6 000*	*2*	*B.C. Govt.*
Heterogeneous catalysts, solid state NMR	*I.D. Gay (604) 291-4889*	*20 000*		*NSERC*

COMMENTS: * *Science Council of B.C.*

UNIVERSITY: *Simon Fraser*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Burnaby, British Columbia V5A 1S6*

TELEPHONE: *(604) 291-4465*
TELEX: *04-354614*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *J.C. Irwin*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Dicalchogenides of transition metals - manufacture, structure and physical properties	*A.E. Curzon (604) 291-4181*	*28 000*	*2*	*NSERC*
Optical characterization of semiconductors, bulk Si, epitaxial Si, semi-insulating GaAs, epitaxial GaAs	*M. Thewalt (604) 291-3384*	*200 000*	*6*	*NSERC/SFU*
New metalic magnetic materials based on growth of new crystal structures using molecular beam epitaxy	*B. Heinrich (604) 291-4402*	*	*	*
Superconducting heterostructure devices	*J.F. Cochran & A.S. Arrott*	*	*	*
Single molecular layers and thin films of layered structures	*S.R. Morrison R.F. Frindt*	*33 000*	*2*	*3M-Canada*
Semiconductor gas sensors	*S.R. Morrison R.F. Frindt*	*60 000*	*2*	*NSERC/Newtec*

COMMENTS: * *Total funding for both projects, $200 000, provided by NSERC, Simon Fraser and British Columbia Science Council*

continued ...

UNIVERSITY: *Simon Fraser*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
EXAFS/XANES investigation of: *- High temperature superconductors;* *- Surfaces and interfacial regions of films grown by molecular beam epitaxy -- metals, GaAs;* *- Interfacial regions in Si/HgCdTe;* *- Amorphous thin films of Ge and Si-Ge alloys;* *- Ion implantation; and heterogeneous catalysts.*	*E.D. Crozier ** *(604) 291-4827*	*50 000 **	*6**	*NSERC/SFU **

COMMENTS: * *Includes all projects on this page*
continued ...

UNIVERSITY: *Simon Fraser*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
High temperature superconductor:	*S. Gygax*	*60 000 **	*4*	*NSERC/SFU/BCSC*
- Growth, structure, p, x, thin films, devices, composition;	*B. Heinrich*		*2*	*CTF/BCSC*
- Raman scattering studies;	*J.C. Irwin*		*2*	*NSERC/SFU*
- FIR studies	*B.P. Clayman*		*3*	*NSERC/BCSC*

COMMENTS: * *Includes all projects on this page*

UNIVERSITY: *Simon Fraser University*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Adsorption and catalysis on metal sulfide layered compounds	*S.R. Morrison/R.F. Frindt/J.C. Irwin*	*86 000*	*3*	*NSERC/DSS/EMR*
Metal sulfide single layers, layered alloys and inclusion solids	*S.R. Morrison/ R.F. Frindt*	*100 000*	*2*	*NSERC*
Heat reflecting glass	*K. Colbow/B.Clayman/ S.R. Morrison*	*48 000*	*2*	*B.C. Sci. Coun.*
Defects in silicon solar cells	*S.R. Morrison*	*30 000*	*2*	*NSERC/DSS/EMR*
Investigation of semiconductor catalysts	*S.R. Morrison/K. Colbow/L. Funt*	*88 000*	*2*	*DSS/EMR*
Solar windows	*K. Colbow/ S.R. Morrison*	*120 000*	*4*	*DSS/EMR*

COMMENTS: *continued ...*

UNIVERSITY: *St. Francis Xavier*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Antigonish, Nova Scotia*
B2G 1C0

TELEPHONE: *(902) 867-2104*
TELEX:
TOTAL RESEARCH STAFF: *8*
DEPARTMENT HEAD: *D.L. Hunter*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Dilatometric studies of phase transitions in metals and high-Tc superconductors	*Michel Steinitz (902) 867-3909*	*30 000*	*2*	*NSERC*

COMMENTS:

UNIVERSITY: *Technical Univeristy of Nova Scotia*
FACULTY/DEPARTMENT: *Electrical Engineering*

ADDRESS: *P.O. Box 100*
Halifax, Nova Scotia
B3Y 2X5

TELEPHONE: *(902) 429-8300*
TELEX: *4292176*
TOTAL RESEARCH STAFF: *10*
DEPARTMENT HEAD: *C.R. Baird*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
All optical switching/modulating element	*M. Cada* *(902) 429-8300 X2445*	*523 800*	*6*	*NSERC/BNR*

COMMENTS:

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Aerospace Institute*

ADDRESS: *4925 Dufferin Street*
Downsview, Ontario
M3H 5T6

TELEPHONE: *(416) 667-7710*
TELEX:
TOTAL RESEARCH STAFF: *34*
DEPARTMENT HEAD: *R.C. Tennyson*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Advanced composite materials	*R.C. Tennyson & J.S. Hanson 667-7710*	*200 000*	*20*	*NSERC/*/NASA*
Electro/optic thin film materials	*N. Salansky (416) 667-7701*	*60 000*	*4*	*/NSERC*
Fibre optics	*R.M. Measures (416) 667-7701*	*300 000*	*6*	*/NSERC*
Ceramics & carbon/carbon composites	*A.A. Haasz (416) 667-7701*	*100 000*	*4*	*/CFFTP/**

COMMENTS: * *Ontario Government Centre of Excellence - Laser & Light Wave & Materials*

** *Ontario Hydro*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Chemical Engineering & Applied Chemistry*

TELEPHONE: *(416) 978-4020*
TELEX: *06-218915*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *James W. Smith*

ADDRESS: *200 College Street*
Toronto, Ontario
M5S 1A4

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Reactive extrusion of thermoplastics	*S.T. Balke (416) 978-7495*	*20 000*	*3*	*NSERC*
Laser processing of polymers	*S.T. Balke (416) 978-7495*	*10 000*	*2*	*NSERC*
Rheological characterization of non-newtonian fluids	*Charles E. Chaffey (416) 978-3067*	*18 000*	*3*	*NSERC*
Fibre-matrix interface - basic study	*M.R. Piggott (416) 978-4745*	*35 000*	*2*	*Du Pont*
Fibre-matrix interface - testing method	*M.R. Piggott (416) 978-4745*	*30 000*	*2*	*NRC-IMRI*

COMMENTS: *continued ...*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Chemical Engineering & Applied Chemistry*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Fibre-matrix interface - elastomers	*M.R. Piggott (416) 978-4745*	*8 000*	*1*	*Polysar*
Improved fibre reinforced polymer	*M.R. Piggott (416) 978-4745*	*26 500*	*2*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Chemical Engineering & Applied Chemistry*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Solid phase processing: *- Roll & extrusion drawing* *- Thermoforming of ordered thermoplastics and pressure forming of ordered plastics* *- Corona and plasma treatment of ordered plastics* *- Ultrasonic and electromagnetic welding of ordered thermoplastics* *- Planishing & laminating of ordered thermosplastics*	*R.T. Woodhams (416) 978-6991*	*~150 000*	*5*	*

COMMENTS: * *NSERC and industry (Alcan & GMC) and Ontario Government (Centres of Excellence)*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *80 St. George Street*
Toronto, Ontario
M5S 1A1

TELEPHONE: *(416) 978-3566*
TELEX:
TOTAL RESEARCH STAFF: *45*
DEPARTMENT HEAD: *S.G. Wittington*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Zeolite chemical sensors	*Ozin (416) 978-2082*	*60 000*	*3*	*
Intrazeolite high resolution imaging, recording, data storage media	*Ozin (416) 978-2082*	*50 000*	*2*	*Alcan/NSERC*
Zeolite fast ion conductors	*Ozin (416) 978-2082*	*25 000*	*1*	*NSERC*
Intrazeolite semiconductor clusters	*Ozin (416) 978-2082*	*25 000*	*1*	
New polymer materials for electronic imaging technology	*Winnik (416) 978-6495*	*123 000*	*4*	*Xerox/NSERC/URIF*
Design of better polymeric materials for use as flocculants and pusher fluids	*Winnik (416) 978-6495*	*116 500*	*7*	*NSERC*

COMMENTS: * *Union Carbide - changing either to CIL or NSERC*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Civil Engineering*

ADDRESS: *Toronto, Ontario*
M5S 1A4

TELEPHONE: *(416) 978-3096*
TELEX: *06-218915*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *S.M. Uzumeri*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Durability of cementitious binders as influenced by self-dessication	*R.D. Hooton (416) 978-5912*	*24 500*	*1*	*U. of Toronto*
The restoration and durability of concrete	*R.D. Hooton (416) 978-5912*	*88 500*	*3*	*NSERC*
Development and evaluation of rapid test method for alkali-aggregate reactivity in concrete	*R.D. Hooton (416) 978-5912*	*58 775*	*2*	*Ontario MTC*
Developing cementitious properties of blast-furnace slag, fly ash and silica by gas tempering	*R.H. Mills (416) 978-5972*	*2 000*	*1*	
Developing cement for in situ stressing of columns to improve load capacity	*R.H. Mills (416) 978-5972*	*1 000*	*1*	
Use of industrial by-products such as blast-furnace slag and fly ash to improve durability	*R.H. Mills (416) 978-5972*	*2 000*	*1*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Civil Engineering*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Plastics reinforced with mineral wool	*R.H. Mills (416) 978-5972*	*1 000*	*1*	

COMMENTS:

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Metallurgy and Materials Science*

ADDRESS: *Toronto, Ontario*
M5S 1A4

TELEPHONE: *(416) 978-3013*
TELEX: *06-218915*
TOTAL RESEARCH STAFF: *30*
DEPARTMENT HEAD: *W.A. Miller*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
High strength polymers	*R.T. Woodhams (416) 978-6991*		*6*	*NSERC/Industry*
Biomaterials - Porous coated implant alloys and bioceramics	*R.M. Pilliar (416) 978-5268*		*5*	*NSERC/MRC*
Biomaterials - properties of tissues	*J.M. Lee (416) 978-5268*		*2*	*NSERC/MRC*
Corrosion of packaging in microelectronics	*S.J. Thorpe (416) 978-8584*		*2*	*NSERC*
Corrosion of amorphous alloys	*K.T. Aust (416) 978-4430*		*4*	*NSERC*
Crystallization of amorphous silicon	*A.R. Perrin (416) 978-5641*		*3*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Toronto*
FACULTY/DEPARTMENT: *Metallurgy and Materials Science*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Interfaces in semiconducting materials	*G.C. Weatherly (416) 978-5635*		*3*	*NSERC*

COMMENTS:

UNIVERSITY: *Trent*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Peterborough, Ontario*
K9J 7B8

TELEPHONE: *(705) 748-1225*
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *A.J. Slavin*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Measurement of the chemical reactivity of bi-metallic surfaces	*A.J. Slavin (705) 748-1289*	*14 000*	*4*	*NSERC*
Measurement/development of ceramic thermal insulation	*A.J. Slavin (705) 748-1289*	*24 000*	*3*	*

COMMENTS: * *URIF, Ontario Government, Industry*

UNIVERSITY: *Victoria*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS: *Box 1700*
Victoria, British Columbia
V8W 2Y2

TELEPHONE: *(604) 721-7150*
TELEX: *049-7222*
TOTAL RESEARCH STAFF: *80*
DEPARTMENT HEAD: *G.A. Poulton*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Polymer membranes/sensors	*T.M.Fyles (604) 721-7184*	*30 000*	*2*	*
Electrode processes on single crystal surfaces	*D.A. Harrington (604) 721-7181*	*30 000*	*1*	*UVic/NSERC*
General electrochemistry and surface chemistry	*R.N. O'Brien (604) 721-7174*	*10 000*	*1*	*NSERC*

COMMENTS: * *Imperial Oil research grant/Contracts*

UNIVERSITY: *Waterloo*
FACULTY/DEPARTMENT: *Chemistry*

ADDRESS:
200 University Avenue West
Waterloo, Ontario
N2L 3G1

TELEPHONE: *(519) 885-1211*
TELEX: *06955259*
TOTAL RESEARCH STAFF: *60*
DEPARTMENT HEAD: *A.J. Carty*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Ultra pure zirconium via chemical vapour deposition of organometallics	*A.J. Carty X3296* *S. Collins X4611*	*17 400*		*AECL*
1 and 2 dimensional organometallic polyacetylides: new organic metals & liquid crystalline materials	*A.J. Carty X3296* *T.B. Marder, A.Rudin*	*71 500**		*NSERC*
Structure property relationships in new polymers	*D. Holden* *X 3107*	*26 134*		*NSERC*
Vibrational spectroscopic studies of electrode surfaces & important electrolyte solutions	*D.E. Irish* *X2500*	*81 980*		*Naval Research*
Intercalation and pillaring of layered oxides: routes to microporous solids	*L.F. Nazar* *X2503*	*26 000*		*NSERC*
Polymerization modelling; polymer based catalysts	*K.F. O'Driscoll* *X3920*	*68 064*		*NSERC*

COMMENTS: * *applied for*

continued ...

UNIVERSITY: *Waterloo*
FACULTY/DEPARTMENT: *Chemistry*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Study of colloid and liquid crystals by nuclear magnetic resonance and other methods	*L.W. Reeves X2441*	*47 999*		*NSERC*
Catalytic properties of transition metal compounds	*G.L. Rempel X2702*	*49 000*		*NSERC*
Aspects of polymer science; polymer blends; rheology of new polymers	*A. Rudin X4524*	*72 192*		*NSERC*
Photodegradable polymers	*M. Tchir X3022*			

COMMENTS:

UNIVERSITY: *Waterloo*
FACULTY/DEPARTMENT: *Mechanical Engineering*

ADDRESS: *Waterloo, Ontario*
N2L 3G1

TELEPHONE: *(519) 885-1211*
TELEX: *069-55259*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *H.W. Kerr*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Laser welding of materials	*H.W. Herr (519) 885-1211 X3470*	*120 000*	*3*	*NSERC/**
Alumina fibre reinforced strontium modified aluminum silicon alloys	*D.C. Weckman (519) 885-1211 X2861*	*18 000*	*2*	*NSERC*
Interfaces in advanced engineering materials	*R.A. Varin (519) 885-1211 X2170*	*~30 000*	*3*	*NSERC*

COMMENTS: * *Ontario Centre for Materials Research*

UNIVERSITY: *Waterloo*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *200 University Avenue West*
Waterloo, Ontario
N2L 3G1

TELEPHONE: *(519) 885-1211*
TELEX: *069-55259*
TOTAL RESEARCH STAFF: *85*
DEPARTMENT HEAD: *J. Grindlay*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Reactive evaporation of semiconducting films of amorphous silicon	*D. Brodie X4465*	*100 000*	*9*	*EMR*
Vacuum deposition of polycrystalline semiconducting films	*D. Brodie X4465*	*53 000*	*5*	*NSERC*
Superconducting ceramics and films	*D. Brodie X4465*	*5 000*	*3*	*U of W*
Semiconducting film characterization	*D. Brodie X4465*	*16 000*	*3*	*Silonex*
Thin film transistor device development	*J.D. Leslie X2932*	*16 000*	*3*	*Litton Systems*
Oxide superconductors	*F. W. Boswell X2219*	*32 500*	*10*	*NSERC/U of W*

COMMENTS: *continued ...*

UNIVERSITY: *Waterloo*
FACULTY/DEPARTMENT: *Physics*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
High power density intercalation battery cathodes (e.g., TiS_2, MoS_2)	*Guenter Scholz X2213*	*55 000*	*2*	*NSERC/RPC, N.B.*
Mapping surface states on semiconductors	*Guenter Scholz X2213*	*40 000*	*2*	*NSERC*
Reduction of cement porosity	*Mik Pintar X2893*	*58 250*	*3*	*NSERC*

COMMENTS:

UNIVERSITY: *Western Ontario*
FACULTY/DEPARTMENT: *Chemistry & Physics*

TELEPHONE: *(519) 679-2111*
TELEX: *0647134*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *

ADDRESS: *London, Ontario*
N6A 3K7

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Surface & interface characterization (analytical methods, interface properties, etc)	**	*630 000*	*8+*	**

COMMENTS: * *Prof. C.S. Rose (Physics) & Prof. C.M. Bancroft (Chemistry)*
** *Prof. I.V. Mitchell (Physics) (519) 661-3393 & Prof. P.R. Norton (Chemistry) (519) 679-2111 X6349, funded by NSERC, 9 industries & University of Western Ontario*

UNIVERSITY: *Windsor*
FACULTY/DEPARTMENT: *Engineering Materials*

ADDRESS: *Windsor, Ontario*
N9B 3P4

TELEPHONE: *(519) 253-4232*
TELEX: *06477684*
TOTAL RESEARCH STAFF: *15*
DEPARTMENT HEAD: *Derek O. Northwood*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Structure-property relationships in materials/energy systems-nuclear, hydrogen & high temp. creep behavior	*Derek O. Northwood X2596*	*36 500*	*5*	*NSERC*
The structure of Zr-2.5 wt%Nb pressure tubing	*Derek O. Northwood X2596*	*10 000*	*2*	*Ontario Hydro*
Metal hydride systems for energy applications	*Derek O. Northwood X2596*	*24 000*	*3*	*Imperial Oil*
Computer simulation of polymer flow for mould design purposes	*Daniel F. Watt X2600*	*60 000*	*2*	*ITL-IRAP*
Computer simulation for flow in two-phase materials	*Daniel F. Watt X2600*	*17 000*	*4*	*NSERC*
Development of fracture toughness in brittle materials	*Daniel F. Watt X2600*	*17 000*	*3*	*NSERC*

COMMENTS: *continued ...*

UNIVERSITY: *Windsor*
FACULTY/DEPARTMENT: *Engineering Materials*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPENDITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Sintering of Si_3N_4	*Hisao Yamauchi X2602*	*13 000*	*2*	*
Study of phase in Ba-La (or Y)-Cu-O high Tc	*Hisao Yamauchi X2602*		*3*	
Study of $BaSiTiO_5$ phase in the BaTiO -SiO system	*Hisao Yamauchi X2602*	*53 205*	*4*	*NSERC*
Crystallized Ba Si TiO thin films Ba-La (or Y)-Cu-O thin films	*Hisao Yamauchi X2602*			*NSERC*
Superconducting electrons in semiconductors	*Hisao Yamauchi X2602*			*NSERC*
Structure refinement through nucleation: solidification processes & thermalmechanical processing	*William V. Youdelis X2594*	*15 000*	*2*	*NSERC*

COMMENTS: * *Japan Steel Works Ltd.*
continued ...

UNIVERSITY: *Windsor*
FACULTY/DEPARTMENT: *Engineering Materials*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD:

ADDRESS:

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Computer calculation of ternary phase diagrams: Application of F.A.C.T. facility	*William V. Youdelis X2594*	*11 000*	*1*	*NSERC*

COMMENTS:

UNIVERSITY: *Winnipeg*
FACULTY/DEPARTMENT: *Physics*

ADDRESS: *Winnipeg, Manitoba*

TELEPHONE: *(204) 786-9754*
TELEX:
TOTAL RESEARCH STAFF: *3*
DEPARTMENT HEAD: *E. Tanchuk*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Characterization of: a) defects in gallium arsenide b) oxygen-related defects in silicon	*S. Dannefaer & D. Kerr*	*~40 000*	*3*	*NSERC*

COMMENTS: *Characterization done by means of positron annihilation*

UNIVERSITY: *York*
FACULTY/DEPARTMENT: *Science/Physics*

ADDRESS: *4700 Keele Street*
Downsview, Ontario
M36 1P3

TELEPHONE: *(416) 736-5249*
TELEX: *065 24736*
TOTAL RESEARCH STAFF:
DEPARTMENT HEAD: *W.J. Megaw*

AIM-AMPT PROJECT TITLE	PROFESSOR IN CHARGE AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	RESEARCH STAFF	FUNDING SOURCE
Laser materials processing	*W.W. Duley (416) 736-5397*	*400 000*	*8*	*Industry*

COMMENTS:

GOVERNMENT LABORATORIES
AND
PROVINCIAL RESEARCH ORGANIZATIONS

DIVISION/BRANCH/DIRECTORATE: *B.C. Research*
Applied Physics & Engineering Division

TELEPHONE: *(604) 224-4331*
TELEX: *04-507748*
TOTAL RESEARCH STAFF: *20*
TOTAL R&D EXPENDITURE 1986-87 ($): *2 100 000*
DIRECTOR: *M. Smith*

ADDRESS: *3650 Wesbrook Mall*
Vancouver, B.C.
V6S 2L2

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Current status of AIMs, opportunities for B.C. research	*M. Movassaghi*	*75 000*	*3*	*complete*
Development of an MMC-based component for racing automobiles	*M. Movassaghi*	*600 000*	*7*	*1989*
Development of an MMC-based component for passenger automobiles	*M. Movassaghi*	*1 400 000*	*7*	*1990*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Canadian Forestry Service*
Northern Forestry Centre

TELEPHONE: *(403) 435-7210*
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *A.D. Kiil*

ADDRESS: *5320-122nd Street*
Edmonton, Alberta
T6H 3S5

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Tigney steam explosion process	*R. Coté (403) 435-7210*	*420 000*	*3*	*1986*
Light coloured phenol-formaldehyde resin for wafer board and oriented-strand board	*R. Coté (403) 435-7210*	*144 000*	*3*	*1987*
Plastic overlay for wood panels (applied polymer research)	*R. Coté (403) 435-7210*	*23 000*	*1*	*1986*
Engineering properties of oriented-strand board	*R. Coté (403) 435-7210*	*200 000*	*3*	*1988*
Development and performance testing of stressed-skin panels and corrugated waferboard	*R. Coté (403) 435-7210*	*192 000*	*0.5*	*1988*

COMMENTS: *Above projects were contracted out to non government establishments under the Canada/Alberta Forest Resource Development Agreement.*

DIVISION/BRANCH/DIRECTORATE: *Canadian Forestry Service*
Research and Technical Services

TELEPHONE: *(613) 997-1107*
TELEX:
TOTAL RESEARCH STAFF: *19*
TOTAL R&D EXPENDITURE 1986-87 ($): *9 000 000*
DIRECTOR: *L.W. Carlson*

ADDRESS: *351 St. Joseph Blvd.*
Hull, Quebec
K1A 0C5

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Laminated veneered lumber	*E. Hsu*	*100 000*	*2*	*1985*
Stabilized wood fibre materials; waferboard, medium density particle board	*E. Hsu*	*600 000*	*2-4*	*1988*
Wood/synthetic fibre composites	*M. Gribble*	*50 000*	*1*	*1987*
Binderless waferboard	*M. Shen*	*250 000*	*2*	*1987*

COMMENTS: *Alternative Contact: Vishwa Mathur (613) 997-1107 Ext. 9324*

DIVISION/BRANCH/DIRECTORATE: *Centre de recherche industrielle du Que. (CCRIQ)*
Secteur Matériaux et Procedés

ADDRESS: *333, rue Franquet*
C.P. 9038
Sainte-Foy (Québec)
G1V 3C7

TELEPHONE: *(418) 659-1550*
TELEX: *051-31569*
TOTAL RESEARCH STAFF: *11*
TOTAL R&D EXPENDITURE 1986-87 ($): *165 000*
DIRECTOR: *J. Dumas*

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Powder extrusion	*Robert Ranger (418) 652-2206*	*150 000*	*2*	
Super plasitcs	*Robert Ranger (418) 652-2206*	*50 000*	*2*	
Composites		*240 000*	*1*	*1988*
CAO/moulded products	*Michel Hains*	*50 000*	*1*	*1987*
Polyol resins	*D. Grenier*	*30 000*	*2*	*1987*
Polyurethane performance	*D. Grenier*	*25 000*	*1*	*1987*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *Centre de recherche industrielle du Que.*
Secteur Matériaux et Procedés

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

ADDRESS:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Mould design (surface treatment)	*D. Grenier*	*35 000*	*1*	*1987*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Communications Research Centre*
Devices and Components Research Branch

TELEPHONE: *(613) 998-2555*
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *R.M. Kuley*

ADDRESS: *3701 Carling Avenue*
Ottawa, Ontario
K2H 8S2

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Compound semiconductor evaluation for electronic device fabrication	*J. Noad (613) 998-2154*	*50 000*	*2*	*on-going*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Communications Research Centre*
Space Technology Branch

TELEPHONE: *(613) 998-2187*
TELEX:
TOTAL RESEARCH STAFF: *150*
TOTAL R&D EXPENDITURE 1986-87 ($): *50 000*
DIRECTOR: *F.R. Vigneron*

ADDRESS: *3701 Carling Avenue*
Ottawa, Ontario
K2K 8S2

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Metal matrix composites, Plastics/polymers composites	*D.G. Zimcik (613) 998-2187*	*50 000*	*2*	*on-going*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Department of National Defence*
Atlantic Research Establishment

TELEPHONE: *(902) 426-3100*
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($): *800 000*
DIRECTOR: *F. Fergusson*

ADDRESS: *9 Grove Street*
Dartmouth, Nova Scotia
B2Y 3Z7

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Rapidly solidified copper based alloys for marine use	*R. Hollingshead (902) 427-3421*	*300 000*	*3*	*1988*
Flammability of glass-reinforced plastics for marine use	*R. Morchat (902) 427-3428*	*300 000*	*2*	*1989*
Development of inorganic intumescent fibre protective coatings	*D. Vienot (902) 427-3429*	*200 000*	*1*	*1989*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Department of National Defence*
Defence Research Establishment Pacific

TELEPHONE:
TELEX: *044702*
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *T. Garrett*

ADDRESS: *FMO Victoria, British Columbia*
V0S 1B0

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Electroslag pivot shaft	*J. Morrison (604) 380-2924*	*30 000*	*0.5*	*1987*
Advanced composites technology development	*K. Street (604) 380-2929*	*450 000*	*3*	
Adhesives for damage repair	*G. Luoma (604) 380-2887*	*10 000*	*0.5*	*1987*
Development of a chromate-free primer with reduced human and environmental toxicity	*T. Foster (604) 380-2843*	*45 000*	*0.7*	*1986*
Surface cleaning using ice blasting	*T. Foster (604) 380-2843*	*40 000*	*1*	*1987*
Coatings removal from aircraft composite surface	*T. Foster (604) 380-2843*	*20 000*	*0.2*	*1986*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *Department of National Defence*
Defence Research Establishment Pacific

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Development & characterization of advanced high frequency ultrasonic transducers	*W. Sturrock (604) 380-2925*	*157 000*	*3*	*1987*
HSLA steels for naval applications	*J. Morrison (604) 380-2924*	*40 000*	*1.5*	*1988*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Department of National Defence*
Research Establishment Valcartier

TELEPHONE: *(418) 884-4456*
TELEX: *051-3098*
TOTAL RESEARCH STAFF: *339*
TOTAL R&D EXPENDITURE 1986-87 ($): *24 000 000*
DIRECTOR: *H.P. Tardif*

ADDRESS: *Boite 8800*
Courcelette (Québec)
G0A 1R0

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
MCT IR photo-conductor	*G.A. Morley (418) 844-4292*	*990 000*	*3-5*	*1986*
Development of MCT photovoltaic detectors	*G.A. Morley (418) 844-4292*	*548 000*	*3-5*	*1987*
Ceramic bonding techniques	*P. Pace (418) 844-4313*	*1 250 000*	*5*	*1987*
CO - O recombination catalyst	*P. Mathieu (418) 844-4305*	*500 000*	*3*	*1986*
Rapidly solidified powders	*P. Voyzelle (418) 844-4234*	*120 000*	*3*	*1988*
(Rocket Motor) Insulants	*G. Couture (418) 844-4422*	*50 000*	*1*	*1990*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Energy, Mines and Resources/CANMET*
Mineral Sciences Laboratory

TELEPHONE: *(613) 995-4088*
TELEX:
TOTAL RESEARCH STAFF: *194*
TOTAL R&D EXPENDITURE 1986-87 ($): *17 500 000*
DIRECTOR: *L.L. Sirois*

ADDRESS: *555 Booth Street*
Ottawa, Ontario
K1A 0G1

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Ceramics: synthesizing, processing and characterizing materials for functional and structural products	*T.A. Wheat (613) 996-4981*	*767 000*	*8*	*on-going*
Semiconductor materials for photochemical & catalytic processes	*S. Ahmed (613) 995-4706*	*200 000*	*3*	*on-going*
Supplementary cementing materials including level of high strength, light weight concretes	*V.M. Malhotra (613) 996-5449*	*850 000*	*7*	*on-going*
Beneficiation of industrial minerals - high purity, ultra fine particles	*R.K. Collings (613) 992-8794*	*200 000*	*2*	*on-going*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Energy, Mines and Resources/CANMET*
Physical Metallurgy Research Labs

TELEPHONE: *(613) 993-4929*
TELEX: *053-3117*
TOTAL RESEARCH STAFF: *115*
TOTAL R&D EXPENDITURE 1986-87 ($): *7 200 000*
DIRECTOR: *W.H. Erickson*

ADDRESS: *568 Booth Street*
Ottawa, Ontario
K1A 0G1

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Properties of rapidly solidified copper based & other alloys	*D. White (613) 993-7074*	*315 000*	*4.5*	
Surface modifications of metals	*D. White (613) 993-7074*	*127 000*	*2*	
Characterization of advanced materials by AEM	*D. White (613) 993-7074*	*100 000*	*1.75*	
Amorphous magnetic alloys	*D. White (613) 993-7074*	*120 000*	*0.75*	
Analytic support for materials processing in space	*D. White (613) 993-7074*	*10 000*	*0.2*	
Ultra-clean steels	*R. Thomson (613) 993-7075*	*220 000*	*4*	

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *Energy, Mines and Resources/CANMET*
Physical Metallurgy Research Labs

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Laser metal treatment applications	*R. Thomson (613) 993-7075*	*15 000*	*3*	
Strip casting	*R. Thomson (613) 993-7075*	*120 000*	*1.5*	
Electro-slag casting of intermetallics	*R.K. Buhr (613) 993-7148*	*120 000*		
Fabrication of rapidly solidified alloys	*R. Thomson (613) 993-7075*	*35 000*		
Hard cutting material development	*R. Thomson (613) 993-7075*	*480 000*		
Advanced automated casting processes	*R. Thomson (613) 993-7075*	*210 000*		

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *Energy, Mines and Resources/CANMET*
Physical Metallurgy Research Labs

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Laser activated ultrasonic inspection	*J.P. Monchalin (514) 641-2280*	*240 000*		

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Manitoba Research Council*
Industrial Technology Centre

TELEPHONE: *(204) 945-6000*
TELEX: *07-587833*
TOTAL RESEARCH STAFF: *35*
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *L.P. Haberman*

ADDRESS: *1329 Niakwa Road East*
Winnipeg, Manitoba
R2J 3T4

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Feasibility study on the use of metallic glasses in force transducers	*K. Tandon (204) 945-6130*	*25 000*	*2*	*1985*
Development of rapid solidification technology in Manitoba - a feasibility study	*K. Tandon (204) 945-6130*	*65 000*	*2*	*1986*
An investigation of the corrosion fatigue of magnetic metallic glasses	*K. Tandon (204) 945-6130*	*43 000*	*2*	*1987*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Atlantic Research Laboratory

ADDRESS: *1411 Oxford Street*
Halifax, Nova Scotia
B3H 3Z1

TELEPHONE: *(902) 426-8332*
TELEX: *019-21653*
TOTAL RESEARCH STAFF: *76*
TOTAL R&D EXPENDITURE 1986-87 ($): *5 700 000*
DIRECTOR: *R.A. Foxall*

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Erosion resistant advanced structural ceramics	*S. Whiteway (902) 426-8269*	*150 000*	*4*	

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Division of Chemistry

TELEPHONE: *(613) 993-2330*
TELEX: *053-3145*
TOTAL RESEARCH STAFF: *174*
TOTAL R&D EXPENDITURE 1986-87 ($): *3 066 000*
DIRECTOR: *D.M. Wiles*

ADDRESS: *Montreal Road*
Ottawa, Ontario
K1A 0R6

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Pitting susceptibility of alloys	*M.J. Graham (613) 993-3548*	*20 000*	*3*	*1990*
Electronic properties of GaAs devices (BNR)	*C.M. Hurd (613) 993-2514*	*150 000*	*3*	*1988*
Synthesis of specialty plastics for photoresist applications	*D.J. Worsfold (613) 993-4456*	*20 000*	*1*	*1989*
Metal cluster catalysts	*J.A. Howard (613) 993-4406*	*60 000*	*3*	*1990*
Reactive element effect in alloys and superalloys	*M.J. Graham (613) 993-3548*	*40 000*	*3*	*1989*
Carbon fibre composites	*D.J. Carlsson (613) 993-2268*	*30 000*	*2*	*1987*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Division of Chemistry

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Impurity analysis of GaAs and CdTe & high purity alloys	*S. Berman (613) 993-3520*	*20 000*	*4*	*1989*
Characterization of ceramics	*D.M. Wiles (613) 993-2330*	*10 000*	*1*	*1987*
Physico-chemical characteristics of polymers	*D.S. Worsfold (613) 993-4456*	*60 000*	*3*	*1987*
Membrane polymers, casting, performance	*C.E. Capes (613) 993-2455*	*220 000*	*10*	*1989*
Fuel injection nozzle for coal/liquid mixtures	*C.E. Capes (613) 993-2455*	*30 000*	*2*	

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Division of Chemistry

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Ultra strong polyethylene fibres (Allied-Signal)	*D.J. Carlsson (613) 993-2268*	*20 000*	*1.25*	*1987*
High temperature stability thermoplastics	*M. Day (613) 993-2268*	*30 000*	*2*	*1989*

COMMENT$:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Division of Physics

ADDRESS: *Montreal Road, Building M-36*
Ottawa, Ontario
K1A 0R6

TELEPHONE: *(613) 993-1053*
TELEX: *053-4322*
TOTAL RESEARCH STAFF: *280*
TOTAL R&D EXPENDITURE 1986-87 ($): *7 091 000*
DIRECTOR: *M.J. Lavbitz*

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Design, manufacture, testing and application of optical multilayer coatings	*J.A. Dobrowolski (613) 993-2094*	*500 000*	*10*	*on-going*
Chemical physics of semiconductors	*D.F. Williams (613) 990-0958*	*370 000*	*3*	*on-going*
Research in condensed matter	*E.W. Fenton (613) 993-9392*	*350 000*	*6*	*on-going*
Research and development on surface +2-D structures	*P.H. Dawson (613) 993-6369*	*430 000*	*12*	*on-going*
Molecular beam epitaxy	*E.V. Kornelsen (613) 993-1123*	*420 000*	*10*	*on-going*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Electrical Engineering

TELEPHONE: *(613) 993-9010*
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *A. Mayman*

ADDRESS: *Montreal Road*
Ottawa, Ontario
K1A 0R6

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Performance of insulating material (eg. polyethelene) in high voltage power cables	*R.J. Densley (613) 993-2660*	*160 000*	*4*	
Design and use of $LiNbO_3$ and GaAs in optical waveguides and optical switching	*J. Domey (613) 993-2557*	*80 000*	*2*	

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Industrial Materials Research Institute

TELEPHONE: *(514) 641-2280*
TELEX: *055-61622*
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($): *10 000 000*
DIRECTOR: *G.L. Bata*

ADDRESS: *75, boulevard de Mortagne*
Boucherville (Québec)
J4B 6Y4

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Strip and squeeze casting of steel	*A. Marquis (514) 641-2280*	*420 000*	*6*	
Computer aided design and manufacturing	*A. Catani/G. Salloum (514) 641-2280*	*270 000*	*4*	
Metal to metal bonding with polymer-based adhesives	*F. Hamel/J. Prinsen (514) 641-2280*	*340 000*	*5*	
Non-destructive evaluation and the development of magnetic, electromagnetic and ultrasonic techniques	*J. Bussiere (514) 641-2280*	*300 000*	*4*	
Automation and robotization of electric arc welding processes	*F. Nadeau (514) 641-2280*	*310 000*	*3*	
Development, characterization and use of ceramic coatings and the development of plasma spraying	*S. Dallaire (514) 641-2280*	*290 000*	*4*	

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Industrial Materials Research Institute

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Non-destructive evaluation and the development of ultrasonic techniques	*S. Bussiere (514) 641-2280*	*300 000*	*4*	
Computer assisted design and manufacture in plastic forming	*A. Catini (514) 641-2280*	*510 000*	*6*	
Analysis of industrial problems with plastics	*G. Salloum (514) 641-2280*	*140 000*	*2*	
Physico-chemical characteristics of polymers	*L. Peche (514) 641-2280*	*210 000*	*3*	
Develoment of materials of improved performance using polymer blends	*A. Catani (514) 641-2280*	*280 000*	*3*	
Ultrasonic characterization of polymers	*J. Bussiere (514) 641-2200*	*140 000*	*2*	

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
Industrial Materials Research Institute

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS: **TOTAL R&D EXPENDITURE 1986-87 ($):**
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Thermal and optical inspection techniques of polymers	*P. Cielo (514) 641-2280*	*230 000*	*3*	
Performance of reinforced polymers and organic composites	*A. Catani/B. Favis (514) 641-2280*	*300 000*	*4*	
Ultrasonic characterization of polymer-reinforced composites	*J. Bussiere (514) 641-2280*	*230 000*	*3*	
Thermal and optical inspection techniques of composites	*P. Cielo (514) 641-2280*	*140 000*	*2*	

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
National Aeronautical Establishment

TELEPHONE: *(613) 993-0141*
TELEX: *053-3145*
TOTAL RESEARCH STAFF: *230*
TOTAL R&D EXPENDITURE 1986-87 ($): *990 000*
DIRECTOR: *G.F. Marsters*

ADDRESS: *Montreal Road, Building M-14*
Ottawa, Ontario
K1A 0R6

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Properties, processing of metallic materials for gas turbine engine components	*J. Immarigeon (613) 993-6170*	*200 000*	*2*	*1990*
Lifing and life extension concepts for gas turbine components including repair and rejuvenation	*A.K. Koul (613) 993-1247*	*130 000*	*2*	*1990*
Development of fracture mechanics test methods for airframe and engine alloys	*M.D. Raizenne (613) 993-9981*	*20 000*	*2.5*	*1989*
Powder processing and properties of metal and ceramic matrix composites	*R.T. Holt (613) 993-0204*	*20 000*	*2.25*	*1992*
Performance of structural materials in simulated space environments	*J.M. Trenouth (613) 993-6178*	*20 000*	*1*	*1990*
Non-destructive evaluation of advanced composites and metallic engine and airframe components	*A. Fahr (613) 993-6443*	*80 000*	*3*	*1991*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
National Aeronautical Establishment

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

ADDRESS:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Development of ultrasonics, acoustic emission and acousto-ultrasonics	*A. Fahr (613) 993-6443*	*50 000*	*3*	*1991*
Evaluation and performance of coatings for aero-gas turbine engine components. Durability studies	*J.P. Immarigeon (613) 993-6170*	*110 000*	*2*	*1990*
Characterization of advanced high-toughness fibre reinforced composites for aerospace application	*R.F. Scott (613) 993-2845*	*40 000*	*2*	*1988*
Fortifiers for advanced composite materials (resin matrix materials)	*P.D. McLean (613) 993-2410*	*10 000*	*1*	*1989*
Development of processing techniques for fibre reinforced composites	*S. Lee (613) 993-6443*	*40 000*	*2*	*1991*
Environmental degradation of fibre-reinforced composites	*J.P. Komorowski (613) 993-3999*	*80 000*	*2*	*1991*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *National Research Council*
National Aeronautical Establishment

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Fatigue and damage tolerance characteristics of advanced composites. Mechanically fastened joints	*C. Poon (613) 993-9981*	*90 000*	*2*	*1990*
Repair of structures involving composite materials	*M.C. Raizenne (613) 993-2794*	*40 000*	*2*	*1991*
Hot isostatic pressing and burner rig evaluation	*W. Wallace (613) 993-2469*	*50 000*	*1*	*1988*
Non-destructive evaluation and development of ultrasonic techniques	*A. Fahr (613) 993-6443*	*40 000*		

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council/ Mech. Eng.*
Gas Dynamics Laboratory

TELEPHONE: *(613) 993-2442*
TELEX: *053-3386*
TOTAL RESEARCH STAFF: *28*
TOTAL R&D EXPENDITURE 1986-87 ($): *1 240 000*
DIRECTOR: *R.G. Williamson*

ADDRESS: *Montreal Road, Building M-10*
Ottawa, Ontario
K1A 0R6

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
High pressure water-jet technology	*M. Vijay* *(613) 993-2731*	*50 000*	*1*	*1989*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council/ Mech. Eng. Manufacturing Technology Centre*

TELEPHONE: *(613) 993-2436*
TELEX: *053-3386*
TOTAL RESEARCH STAFF: *53*
TOTAL R&D EXPENDITURE 1986-87 ($): *1 121 000*
DIRECTOR: *G. McGregor*

ADDRESS: *Montreal Road*
Ottawa, Ontario
K1A 0R6

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Cutting with water jets and lasers/ High pressure water jet technology	*G. McGregor/M. Vijay (613) 993-6977*	*50 000*	*1*	
Laser heat treatment of steels	*M. Islam (613) 993-6977*	*60 000*	*1*	*1987*
Development of ceramic components, e.g., valves for diesel engines	*G.D. Webster (613) 993-1391*	*150 000*	*3*	

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *National Research Council/ Mech. Eng. Tribology & Mechanics Lab*

TELEPHONE: *(604) 666-2602*
TELEX: *04-55141*
TOTAL RESEARCH STAFF: *10*
TOTAL R&D EXPENDITURE 1986-87 ($): *~1 000 000*
DIRECTOR: *Clive Dayson*

ADDRESS: *3650 Wesbrook Mall*
Vancouver, British Columbia
V6S 2L2

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Tribology of advanced materials (ceramics and composites)	*M. Hawthorne (604) 666-2603*	*180 000*	*2*	*on-going*
Development of wear-resistant rail steels	*J. Kalousek (604) 666-6490*	*30 000*	*1*	*go-going*

COMMENTS: *Tribology -- Friction, wear and lubrication technology*

DIVISION/BRANCH/DIRECTORATE: *New Brunswick Research and Productivity Council*

TELEPHONE: *(506) 452-8994*
TELEX: *014-46115*
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR: *D. Abbott*

ADDRESS: *P.O. Box 6000*
Fredericton, New Brunswick
E3B 5M1

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Inspection of composites	*R.V. Murphy (506) 452-8994*	*140 000*	*1*	*1987*
Fracture of polymers	*A.B. Mitchell*	*120 000*	*2*	*1987*
Rolling of HSLA steel	*A.B. Mitchell*		*1*	*1988*
Fabrication of large piezoelectric transducers	*R.V. Murphy*	*140 000*	*1*	*1987*
Standardization of ion microprobe by ion implantation	*Chryssoulis (506) 452-8994*	*83 000*	*1*	*1985*
Creep rupture and environmental cracking of polymers	*A.B. Mitchell (506) 452-8994*	*40 000*	*2*	*1988*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *New Brunswick Research and Productivity Council*

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

ADDRESS:

AIM-ANPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Superconducting materials	*L. Danisch (506) 452-8994*	*30 000*	*1*	*1988*
Electrochemistry/evaluation of advanced battery materials	*D. Desjardins (506) 452-8994*	*1 500 000*	*15*	*on-going*

COMMENTS:

DIVISION/BRANCH/DIRECTORATE: *Transport Canada*
Transportation Development Centre

TELEPHONE: *(514) 283-0000*
TELEX: *05-24713*
TOTAL RESEARCH STAFF: *50*
TOTAL R&D EXPENDITURE 1986-87 ($): *16 700 000*
DIRECTOR: *N.E. Rudback*

ADDRESS: *200, boul. Dorchester ouest*
Complex Guy-Favreau, Pièce 601
Montreal (Québec)
H2Z 1X4

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPENDITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Fabrication test of small superconducting solenoid	*M. Audette (514) 283-0044*	*374 000*	*1*	*1986*
Aluminum welding methods	*R. Nishizaki (514) 283-0026*	*143 000*	*1*	*1986*
Development of Al/Air cell battery	*J. Morgan (514) 283-0032*	*320 000*	*1*	*1986*
Test program $LiMoS_2$ batteries	*J. Morgan (514) 283-0032*	*133 000*	*1*	*1986*
Gas turbine ceramics	*B. Myers (514) 283-0054*	*76 000*	*1*	*1986*
Advanced composite wing	*B. Myers (514) 283-0054*	*150 000*	*1*	*1987*

COMMENTS: *continued ...*

DIVISION/BRANCH/DIRECTORATE: *Transport Canada*
Transportation Development Centre

TELEPHONE:
TELEX:
TOTAL RESEARCH STAFF:
ADDRESS:
TOTAL R&D EXPENDITURE 1986-87 ($):
DIRECTOR:

AIM-AMPT PROJECT TITLE	CONTACT PERSON AND TELEPHONE #	PROJECT EXPEN-DITURES ($)	NO. OF RESEARCHERS	EXPECTED COMPLETION DATE
Superconducting magnet	*M. Audette (514) 283-0044*	*12 000*	*1*	*1988*

COMMENTS: