

HIGHLIGHTS REPORT YEAR 2012-2013

(April 2012 - March 2013)



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MESSAGE FROM THE PRESIDENT OF THE BOARD OF DIRECTORS



As President of the Board of Directors of the MiQro Innovation Collaborative Centre, I am pleased to present the Centre's first highlights report. During this first year of existence, the C2MI, under the leadership of its President CEO, Normand Bourbonnais, accompanied by a team of competent and dedicated leadership has promoted this new, unique world-class infrastructure to all active networks working in various spheres of the economy and using various facets of microelectronics. This first year has allowed the C2MI to complete the management team by hiring qualified staff, to refine the management structure, to position the Center amidst networking activities and to identify and develop meaningful partnerships for the future success and continuity of C2MI.

I cannot ignore the tremendous work of the Board of Directors of MiQro Innovation Collaborative Centre. The skill and dedication of our directors has been remarkable because starting an infrastructure such as that of C2MI requires great rigor, availability and involvement. C2MI, through its unique business model has brought its share of challenges and the members of the Board were able to assist and support the management team with the start-up of this exceptional project.

Thus, C2MI, in collaboration with its partners is ready to position itself as an international reference for scientific research and commercialization in the field of packaging and testing of complex microsystems and micro electromechanical systems as defined in its vision. We are fully prepared to assume our role as a springboard for innovation and commercialization and announce many successes throughout the coming year!

MESSAGE FROM THE PRESIDENT CHIEF EXECUTIVE OFFICER



It is with great pride and sense of accomplishment that we present the first C2MI highlights report. You will discover through reading this report, that our team was able to successfully meet the challenges encountered. Starting a new infrastructure brings its share of twists and turns and it is with flying colours that we were able to carry out this project. It is impossible to ignore the excellent work of the Board members, who over the past months, have offered considerable support through their competence, availability, curiosity and implication to understand the business model and the roles granted to C2MI. Our organization is coming to the end of its start-up phase, so to speak. We have taken, over the past few months, countless tasks of business development and targeted networking helping to complete our ecosystems offer. We have welcomed training activities to popularize our role, we participated in trade fairs and thus strengthen the position and reputation of C2MI. Our team already aspires to ensure that the year ahead will position the C2MI even more strongly among the major research and development centres in the areas of electronic systems, electromechanical and embedded systems. We are ready to begin ***Reinventing innovation!***

BRIEF HISTORY

The MiQro Innovation Collaborative Centre was announced in September 2009 after obtaining a \$218M grant from the Ministère du Développement économique, de l'Innovation et de l'Exportation (MDEIE) (\$94.9M), Industry Canada (\$82.95M) and several private partners (Université de Sherbrooke, IBM Canada Ltd and Teledyne DALSA) and several equipment partners as part of Canada's Knowledge Infrastructure Program.

In December 2010, C2MI was recognized as a Centre of Excellence for Commercialization and Research (CECR) by the Networks of Centres of Excellence of Canada (RSE), obtaining an additional funding of \$14.1M, for a total project of \$23.2M, over a 5-year period.

Construction of this state-of-the-art technology Centre began in 2010 and was completed by fall 2011. C2MI now welcomes industry leaders in its cutting-edge facilities where R&D is performed to accelerate the commercialization of their innovative microelectronic prototypes.

Canada is a favorite place for high technology. The national microelectronic industry now stands at \$4.1 billion. Electronic components, especially integrated circuits, or chips, are the most important part of high-tech devices, from consumer technologies such as personal computers to those of tomorrow such as GPS chips sewn into children's clothing.

Encouraging the deployment of an integrated innovation chain in microelectronics, C2MI will provide new training opportunities for university researchers, will accelerate the international commercialization of Canadian innovations, stimulate development and encourage the creation of microelectronics companies in Canada.



C2MI FAST FACTS



INAUGURATION

C2MI was officially inaugurated on July 2012. Microelectronics ecosystem of northeastern America, C2MI is one of the world's leading centers in this field. The Centre serves as an interface between academic and industrial research and manufacturing of complex microsystems. It allows prototyping of microsystems that will be dictated by the needs of the market in application areas such as communication and information technology, automotive, aerospace, environment and health. Thus helping to accelerate the commercialization of products required by the industry and improve the tools, material, techniques and testing.

" we aim to become an international reference in scientific research and marketing in the rapidly emerging microelectronics sector, in particular in the realms of design, encapsulation and the verification of complex microsystems, and electromechanical microsystems (MEMS). Among the factors that clearly set C2MI apart from most research centres recognized across the world, mention should be made of its close ties with the academic and industrial sector, its integrated supply chain and the maintenance by the designer of intellectual property rights on the products developed there. The C2MI's role as a centre of excellence is decisive for the future of microelectronics in Quebec and in Canada. Today's inauguration allows us to publicize this outstanding centre that offers knowledge, know-how and state-of-the-art equipment in an ultramodern facility", stated Norman Bourbonnais, President CEO of C2MI at the inauguration.



From left: Normand Bourbonnais, President Chief Executive Officer of C2MI, professor Jacques Beauvais, vice-rector of research at Université de Sherbrooke, Pauline Quinlan, Mayor of the city of Bromont, the Honorable Christian Paradis, federal minister of Industry, Jean Charest, Prime minister of Quebec, Pierre Paradis, MP for Brome-Missisquoi, John Lutz, President of IBM Canada, and finally, Brian Doody, Chief Executive Officer of Teledyne DALSA.

WORLD RENOWNED PARTNERS

To be an active member of C2MI means having access to a unique collaboration structure, networking opportunities with world leaders and a membership tailored to your needs. C2MI offers the following possibilities:

- ▶ Long-term commitment
- ▶ Commitment by project
- ▶ Multiple collaborations on various projects
- ▶ Technology showcase
- ▶ Technology networking

Since its inauguration eleven new active industrial members were added to the two founding members, IBM and Teledyne Dalsa. The interest of players of international renown in the field of microelectronics continues to grow and there have been numerous visits to this infrastructure since its inauguration. Large companies take interest in new development opportunities offered by the Centre and its unique model. As for universities their contribution is exceptional, since their role as the vanguard of the development of new fundamental concepts allows industry members to be more competitive on the world stage. In addition, the Centre offers a unique platform for students to learn, to develop, to prove concepts and prototypes and finally work with renowned companies.



The C2MI ensures that it always offers its members the opportunity to work with key partners. Therefore the supply chain is always completed for each member within the C2MI.

MEMBRE OF NETWORK OF CENTRES OF EXCELLENCE (CECR)

In December 2010, C2MI was awarded a grant of \$14.1 million over five years by the Network of Centres of Excellence, for a total investment of \$23.3 million. These funds were obtained through the 2010 competition of the Centres of Excellence for Commercialization and Research (CECR). This program supports research partnerships that have been established between universities, the industry, non-profit organizations and government agencies. C2MI members can thereby promote the growth of the microelectronics industry in Quebec and elsewhere in Canada, creating wealth and jobs in the knowledge sector.



\$90 million per year.

The NCE program supports networks of large-scale research conducted by post-secondary institutions that mobilize the creativity and inventiveness of Canadian engineers and researchers working in the health, natural and human sciences. Partners from industry, government and non-profit organizations provide additional expertise and provide a contribution in cash and in kind of close to

Networks focus on critical issues faced by Canada and the rest of the world:

- ▶ By mobilizing the capacity of multidisciplinary research across Canada;
- ▶ By promoting the involvement of partners from several post-secondary institutions and various organizations in the private and public sectors;
- ▶ By training the next generation of highly qualified personnel – to date, more than 36 000;
- ▶ By working with end users to accelerate the creation and application of new knowledge;
- ▶ By increasing collaboration between researchers in Canada and abroad.

The CECR program is an initiative of three federal granting agencies, the Natural Sciences and Engineering Research Council of Canada, Canadian Institutes of Health Research and the Social Sciences and Humanities Research Council, in partnership with Industry Canada.



2012-2013 C2MI FIGURES

INVESTMENTS

- \$5,5 M invested by partners
- \$43 M invested in R&D

JOBS CREATED

- 104 new jobs
- 40 students involved in projects developed at C2MI :
 - 15 postdoctoral level
 - 9 PhD level
 - 14 graduate level
 - 2 undergraduate level
- 11 teachers / researchers involved

PROJECTS

- 10 projects of industry-university collaboration
- 56 new products developed

PATENTS

- 15 patents obtained
- 21 patents pending

NEW MARKETS PENETRATED

- Photonics
- Infrared imaging
- Inertia sensor
- LED
- CMOS high power
- Mono electronic memory



C2MI EQUIPMENTS

The attraction of the MiQro Innovation Collaborative Centre relies on a combination of technical expertise, cutting edge equipment and a single infrastructure. Equipment manufacturers working in collaboration ensure the development of these devices according to market needs in order to facilitate accelerated development of innovative prototypes.

135 MILLIONS\$
EN ÉQUIPEMENT

Covering a total area of 15 000 m², the C2MI consists of two connected buildings. The office space is 5 000 m², while the laboratories occupy an area of 5 300 m², and the other services are spread over 4 700 m² remaining.



Equipment at the cutting edge of technology

The MiQro Innovation Collaboration Centre, together with the Scientific Committee, maintains a standby technology strategy in order to ensure delivering cutting-edge equipment to member industries and thus enabling them to develop innovative processes and products. The university-industry close collaboration can target potential and real convergence between research and academic development and possible applications of this research in the industry.

THE DONORS

One of the major strengths of the Centre is based on the quality of scientific equipment it makes available. Thus, nearly 70 manufacturers who contributed at different levels which allow the Centre to have the most advanced equipment possible. Indeed, many of the facilities that are found in C2MI are first generation. The close collaboration between suppliers and users ensures optimal development over time, including the development of new components.

DONATIONS of more than \$1M

Akrion Systems LCC
Alchimer
ASML
EV Group Inc.
McBain Instruments
Rudolph Technologies Inc.
SPTS Technologies
Teradyne Inc.

DONATIONS from \$100K to \$1M

Accretech America
Advanced Laser Separation Int'l
Agilent Technologies Canada Inc.
Akrometrix Inc.
Datacon
Delta Design Inc.
Disco Hi-Tec America Inc.
Ebara Technologies Inc.
Fédico Inc.
Heller Industries Inc.
KLA-Tencor Corporation
Leica Microsystems (Canada) Inc.
Mesotec Inc.
N&K technology, Inc.
Nanometrics Inc.
Panasonic Factory Solutions co.
Physical Electronics Inc.
Rudolph Technologies Inc.
Scientific Value Solution Corp.
Sonoscan Inc.
Speedline Technologies Inc.
Stoelting LLC
Strasbaugh
TA Instruments
Tektronik Inc
Tescan USA Inc.
Test Research inc.
Tokyo Electron America Inc
Ulvac Technologies Inc.
Universal Instruments Corp.
Xradia Inc.
Yield Engineering Systems Inc.

DONATIONS of less than \$100K

AST products Inc.
Boschman technologies
Cogiscan
Contrôle systemation
Critical systems, Inc.
DEK International
Despatch Industries Ltd.
EMG Technologies Inc.
Finetech
High Speed Imaging inc.
Hoskin Scientifique LTEE
Hunt Material Handling
Micro Control Company
Microcontrol Electronic SRL
Mobiliers Ergo Plus Inc.
Nada Technologies Inc.
Nitto Denko America Inc.
Nordson ASYMTEK
Nordson March
Oxford instruments Inc.
PVA TePla America Inc.
Rofin-Baasel Inc.
Royce Instruments Inc.
Spécialités Industrielles Canada Inc.
Toray Engineering Co., Ltd
VWR international
Wafer process systems Inc.

INTELLECTUAL PROPERTY

The C2MI ensures that the member responsible for marketing a product can have control of the intellectual property developed. Some rules specify the management of intellectual property at C2MI:

1

Projects must be approved by a scientific committee before implementation

3

Researchers and students who collaborate on the project should be able to present their thesis within the usual time

2

Any activity of joint development between two or more members shall be governed by an agreement of intellectual ownership

4

In the case where the scope of a project is not consistent with the market segments of interested parties, the intellectual property rights accrue to those who seek to market it

In the context of the projects under development at C2MI “reinventing innovation” is also reflected in the assembly of radically innovative intellectual property agreements allowing not only to reach the industrial partners commercialization objective in the best delay possible but also by establishing a stable long-term relationship with academic partners.

THE MEMBERS OF C2MI

ACADEMIC NETWORK :



Le génie pour l'industrie



INDUSTRIAL MEMBERS :



APEXX



Le pouvoir d'optimiser®



EVENT PARTICIPATION IN 2012

The C2MI must quickly position itself on the world stage of research and development of microelectronics. The innovations and new products constantly entering the market more and more rapidly are proof. In order to promote its services, C2MI participates in annual trade fairs as an exhibitor or as a guest speaker. During the 2012-2013 year C2MI hosted or attended the following events:

MEMS Executive Congress – MEMS Industry Group

March 12th 2013

Amsterdam, Netherlands

Description: In Europe, companies and research organizations are at the heart of innovations that affect mobile communications, automotive systems, energy production or medical applications and quality of life for aging populations. MEMS Executive Congress Europe is an opportunity for the global MEMS community to mingle with European experts in these dynamic markets.



MEMS in Medical Devices

November 27th 2012

Boston, Massachusetts

Description: A one-day conference to discover the capabilities of micro-electro-mechanical systems and possible integration opportunities in medical devices.



MEMS Industry Group-MEMS Executive Congress USA

November 6th 2012

Scottsdale, Arizona

Description: Important annual conference for the MEMS industry. It is a unique professional forum at which executives from companies designing and manufacturing MEMS technology participate with their clients. The purpose of this forum for policymakers is to identify, collaborate and analyze the global MEMS market with end users and potential end users of MEMS.



ITAC – Eastern Townships Visit

November 5th 2012

C2MI, Bromont, Canada

Description: The Canadian Association of Information Technology (ITAC) and the Council of Strategic Microelectronics (CSM), visit the Eastern Townships region that is becoming a hub of discovery, innovation and development of innovation in microelectronics and nanotechnology.



ITAC 18th National Executive Forum

October 10th and 11th 2012

Toronto, Ontario

Description: Annual celebration that brings together the industrial and academic networks of Canada and government leaders along with the top graduate students in science and engineering.



MEMS IN MOTION

September 12th 2012

Palm Springs, California

Description: The summit MEMS in motion is an exclusive, unique event, designed to meet the growing need of collaboration in the inertia device industry. This event offers a model facilitating networking and promoting the development of productive collaborations among industry leaders.



Electronic Components and technology Conference (ECTC) -2012

July 28th to 31st 2012

San Diego, California

Description: The conference addresses cutting-edge developments and technical innovations. Topics include sub-case assembly of semi-conductors, modeling and simulation, optoelectronics, interconnections, materials and processing, applied reliability, assembly and manufacturing technology.



2012 Si-EPIC passive workshop participants in C2MI, Bromont

July 13th 2012

C2MI, Bromont (Quebec) CANADA



Description: Participants of the workshop were able to understand the steps of encapsulating electronic chips by visiting the C2MI facilities.

SEMICON West 2012

July 10th to 12th 2012

San Francisco, California

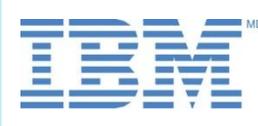


Description: Annual event for the global microelectronics industry. It aims to introduce new products and technologies in the design and manufacturing of microelectronic products.

IBM PACKAGING PARTNER DAY

May 8th 2012

C2MI, Bromont (Quebec) Canada



Description: Networking day for IBM partners

ITAC – Best Practice Forum

April 10th 2012

Toronto, Canada



Description: In Canada the microelectronics industry emerged in the 50s and 60s with the activities of Northern Electric (now Nortel). Just as the global industry, it is the manufacturing companies that are vertically integrated that have emerged and evolved into companies as we know them today.

CATA / CMC

April 3rd 2012

Toronto, Canada



Description: The leaders of the industry and the academic world presented their perspective market offers and the challenges of R&D for Canadian companies involved in the embedded systems industry.



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