



QCAM

Quebec Centre for
Advanced Materials

Newsletter

Winter 2024

SPECIAL ISSUE

2023 Student symposium

On Friday, December 8, 2023, the [Quebec Center for Functional Materials](#) (QCAM) organized the [third edition of the student conference](#) at Université du Québec à Trois-Rivières ! The symposium was entirely organized by the QCAM student committee, and 80 participants attended the event, among them 84% of students and postdocs,

coming from the 11 member institutions from all over Quebec. This bilingual event encourages collaboration between QCAM members by increasing the visibility of research groups, disseminating student research work, and creating networking opportunities.

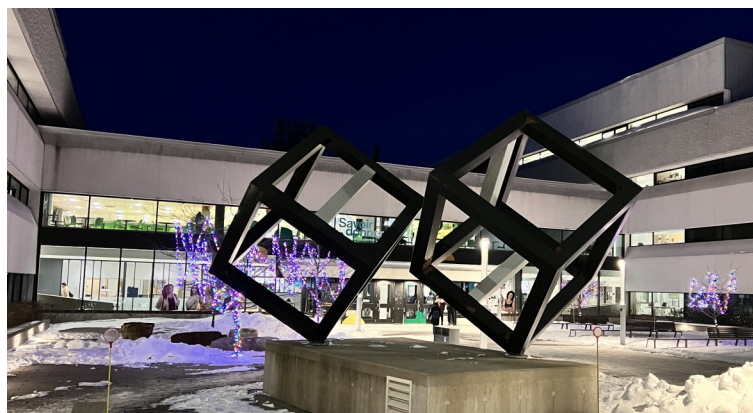
The program included 21 oral presentations and 28 poster presentations! The student presentations were given within the framework of the six QCAM research themes: three fundamental axes (science of polymers, self-assembly, and nanoscience) and three applied axes (applications in energy, green chemistry, and biomedical). A workshop on the theme of “equity diversity and inclusion in research”, held by Geneviève Côté, MA, was an excellent opportunity for students and professors to know how to build a more inclusive working environment in the research lab. In addition, all attendees participated in a pilot plant visit to Inno-fibre to learn about their work on biomass-based eco-products and eco-fuels. The prizes for oral presentations were awarded to Zujhar Singh (1st, Concordia University), Imane En-Naji (2nd, Université du Québec à Montréal), Johann E.O. Sosoe (3rd, Université de Montréal) and Brunilda Rica (4th, Université de Montréal). The prizes for the best



poster presentations were awarded to Arindam Saha (1st, Université de Montréal), Natalia Vargas Perdomo (2nd, Concordia University), Maryam Lormahdiabadi (3rd, Université de Montréal) and Safa Ladhari (4th, Université du Québec à Trois-Rivières). Furthermore, this year the student committee organized the first version of the QCAM

science video contest named “*Inside the laboratory*”: students and postdocs could submit a self-produced video. The awards go to Caroline St-Antoine (1st, Université de Montréal), Ameer Nizami (2nd, Concordia University) and Marco Assis (3rd, École de Technologie Supérieure). Our thanks go to Quebec Center for Functional Materials and Université du Québec à Trois-Rivières for their generous sponsorship. The symposium booklet is available [online](#).

Article written by Victor Quezada and Mostafa Shagar (chair and member of the student committee, respectively).



2023: a year full of events

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QCAM 2024 calendar and grants for international internships

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International internship grants

FRQNT-Mitacs

Mitacs et le FRQNT will provide QCAM with **two Globalink Mitacs grants**. QCAM will carry out an internal evaluation to select two applications and those that will be put on the waiting list. Two types of grants are awarded:

- Grants for internships abroad (“outgoing”)
- Grants for internships in QCAM labs (“incoming”)

To apply, please send the following documents to Petr Fiurasek (qcam.chemistry@mcgill.ca) no later than Wednesday, **31 January at 5:00 pm**:

- A project description and candidate information (Word document)
- An up-to-date curriculum vitae (CV) and academic transcript (university only, copies/scans accepted)
- Supporting letters (from your supervisor and the host supervisor).

2024 QCAM event calendar

January 2024: The QCAM course begins

di	lu	ma	me	je	ve	sa
14	15	16	17	18	19	20

April 2024: Research professionals’ symposium, satellite event of FQMA (voir page 9)

di	lu	ma	me	je	ve	sa
7	8	9	10	11	12	13

May 2024: QCAM annual meeting at U. Laval

di	lu	ma	me	je	ve	sa
19	20	21	22	23	24	25

July 2024: MATES summer school at Bordeaux

di	lu	ma	me	je	ve	sa
30	1	2	3	4	5	6

QCAM (post)doc: what next?

Rusoma Akilimali, Advisor, technology and innovation at PRIMA Québec

As one of the students who obtained their doctorate during the pandemic, in December 2020, the end of my academic career would provide much less opportunities for encounters and exchanges than what I had been able to experience until then.

This had been the case from a very young age, as I attended the French high schools of Vienna and Tokyo before beginning my academic career at Strasbourg. Although this was a much smaller city, its context, combining a European character and liveability, allowed me to settle in rapidly. The University of Strasbourg, where I obtained my BSc and MSc degrees, is the alma mater of no less than 18 Nobel prize winners, including Chemistry laureates Jean-Pierre Sauvage and Jean-Marie Lehn. Just like its city, this institution has been able to reflect at once its unique local identity and its world-class scientific reputation.

Thus, choosing Montreal was natural choice for my next career stage. More specifically, I moved to INRS, under the



supervision of professor F. Rosei (QCAM member). My PhD thesis dealt with the applications of graphene nanoribbons. On the one hand, we aimed to optimise the generation of solar energy by dye-sensitised cells; on the other, our goal was to produce hydrogen by means of quantum dot cells.

This fascinating subject led me to explore not only the technological applications of advanced materials, but also their impact on the society and the environment. It was with this in mind that I decided to take a closer look at the economic issues at stake, making a rewarding two-year stint at Desjardins.

Today, as advisor, technology and innovation at PRIMA Québec, a Sectoral Industrial Research Group (SIRG) dedicated to advanced materials, I come into my own as catalyst between the industrial and the academic worlds. So, I contribute to Quebec’s economic development and international visibility. (Translated by Matteo Duca)

Send your story to matteo.duca@umontreal.ca.

2023—A YEAR FULL OF EVENTS

University-college networking symposium in materials science (January)

University and college research have complementary priorities and strengths. How can we stimulate the collaboration and maximise the synergy between these key players in the materials science innovation ecosystem?

This was the aim of the *University-college networking symposium* (10 January, Collège Montmorency) that showcased the achievements of college research while also addressing its challenges. By looking at the specific features of college research, the symposium also aimed to pinpoint the main issues at stake. 76 participants attended this event, of whom 24 were affiliated to a college and 32 to a university.



The symposium panelists. From left to right: Janice Bailey (FRQNT), Marie-Pierre Ippersiel (PRIMA), Grégory Hersant (Réseau des CCTT), Nicolas Berrouard (CNETE), Mario Leclerc (U. Laval and QCAM). At the lectern: the moderator Samuel Gervais (Réseau des CCTT).

On the programme:

- Talks by QCAM members working at a college: **Maritza Volel** (Collège Montmorency) and **Pierre Baillargeon** (Cégep de Sherbrooke)

- Talks by four researchers working at college technology transfer centres : **Christian Désilets** (CNETE), **Ngoc-Duc Trinh** (ICI), **Tarik Jabrane** (Innofibre), **David Gendron** (Kemitek)
- A presentation by **Samuel Gervais** (Réseau des CCTT), who then chaired a panel discussion on university-college collaborations. Panelists: **Janice Bailey** (FRQNT), **Nicholas Berrouard** (CNETE), **Grégory Hersant** (Réseau des CCTT), **Marie-Pierre Ippersiel** (PRIMA) and **Mario Leclerc** (CQMF). The executive summary of the panel discussion is available on the [QCAM website](#) (French only).
- Poster session. The best poster award went to **Laura Brière** (U. Laval) and **Lori Leblond** (COALIA) for their research on virucidal coatings.

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« Universities, carrying out fundamental research, are best placed to advance knowledge, while CCTTs aim to address the needs of companies wishing to improve or integrate new processes, or to develop and market a new product. »

Marie Gagné, former CEO of Réseau des CCTT,

[LeDevoir Bis](#)

Sustainable development and materials science - Key issues, challenges and solutions (February)

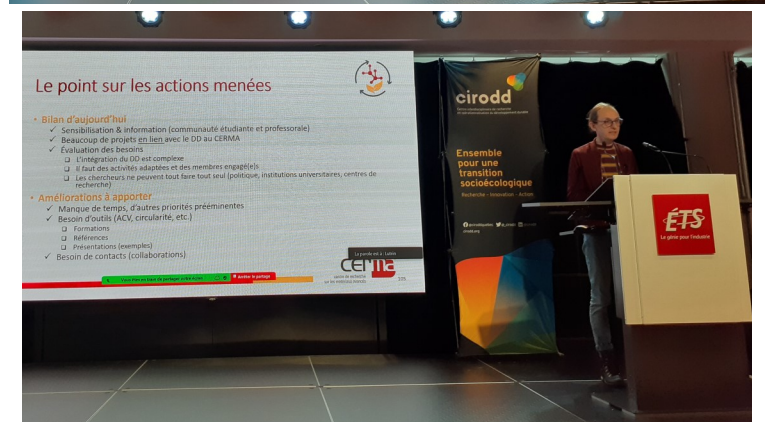
Materials shape the world, constitute the fabrics of our society and determine our environmental footprint. Invaluable tools for a successful transition to a sustainable future, advanced materials will however have to integrate the principles of circular economy.

To contribute to this paradigm shift, this symposium aimed to pinpoint the issues at stake and, more importantly, to invite the participants to reflect and put forward possible solutions.

On the programme:

- Talks by a research professional (**Thierry Lefèvre**) and four professors (**Normand Mousseau, Claudiane Ouellet-Plamondon, Federico Rosei et Ben Amor**) who are QCAM or CIRODD members.
- A panel discussion featuring Thierry Lefèvre, Normand Mousseau et Claudiane Ouellet-Plamondon. The moderator was science journalist Valérie Levée.
- A participatory workshop led by professor Luc Stafford (UdeM) and Manon Boiteux, responsible and coordinator of the programme *Construire l'avenir durablement (CLAD)*. The title was: *Workshop on ecoresponsibility in materials science : thinking and taking action on a personal level.*

The report of the symposium, drawn up by Valérie Levée, is available [on the QCAM website](#).



Three QCAM members giving talks during the symposium (from top to bottom): Claudiane Ouellet-Plamondon, Federico Rosei, Thierry Lefèvre

« We need to stop thinking of materials just as materials. We need a real ability to think about global issues and to understand life cycles.»

Normand Mousseau, professor at the Department of physics at UdeM and Scientific director of the Trottier Energy Institute at Polytechnique Montréal

Co-organiser



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Quebec advanced materials forum (FQMA) - Focus on collaborative research (April)



Une organisation de :



The FQMA is a one-of-a-kind event aiming to bring together all stakeholders in Quebec’s materials innovation ecosystem. Creating an environment conducive to networking, the FQMA addressed the issues at stake in collaborative research, the funding opportunities and the expertise of several scientific platforms.

The first edition of FQMA took place at Quebec on 13 and 14 April; the event brought together 134 participants with varied profiles, mainly affiliated to an academic institution or research centre. The FQMA welcomed two government representatives who gave the opening and closing remarks, respectively: the MNA for Jean-Talon Joëlle Boutin, parliamentary assistant responsible for Science and Innovation, and Mathieu Gervais, assistant deputy minister for Science and Innovation at the Ministry of Economy, Innovation and Energy (MEIE). The scientific director of FRQNT, Janice Bailey, gave the opening remarks on the second day of the event.

On the programme, day 1: collaborative materials science research

- Funding collaborative research: talks by **Nicolas Doiron-Leyraud** (MEIE), **Michel Lefèvre** (PRIMA Québec), **Benoît Roberge-Vallières** (MITACS) and **Hé-**

lène Fortier (NSERC).

- Panel discussion on collaborative research, with: **Jesse Vincent-Herscovici** (Axelys), **Marie-Pierre Ippersiel** (PRIMA), **Valérie Oberson** (IBM), **David Danovitch** (Université de Sherbrooke). Moderator: **Isabelle Vézina** (Conseil de l’Innovation).
- « *How to set up a successful collaboration* », a workshop by the **Groupe des partenariats et affaires de l’Université de Sherbrooke**, **Ludvik Martinu** (Polytechnique Montréal) and **Tigran Galstian** (Université Laval).



The QCAM director, chair of the AM session on April 13, and the panelists

(Continue on page 6)

(Continued from page 5)

- Five challenges presented by the companies **Calogy Solution**, **Chemia Discovery**, **Intersand**, **ORS Inc.** and **Brilliant Matters**

- Poster and networking session with exhibitor stands

Day 2: Discovering research centres and academic projects relevant to the industry

- Presentations by research centres:
 - Regroupement québécois sur les matériaux de Pointe (RQMP)
 - Centre de recherche sur les matériaux avancés de l'U. Laval (CERMA)
 - Centre d'optique, photonique et lasers (COPL)
 - McGill Institute of Advanced Materials (MIAM)
 - Laboratoire de Micro et Nanofabrication de l'INRS (LMN)
 - Institut d'innovations en éco matériaux, éco produits et éco énergies de l'UQTR (I2É3)
 - Laboratoire de caractérisation des matériaux de l'UdeM (LCM)
 - Centre de recherche sur les systèmes polymères et composites à haute performance (CREPEC)
 - Quebec centre for advanced materials (QCAM)
 - Centre in green chemistry and catalysis (CGCC)
 - Institut quantique (IC)
 - Groupe de recherche en science et technologie des couches minces (GCM)
 - Laboratoire de caractérisation des matériaux polymères (LCMP)
 - Laboratoire de mécanique multiéchelles de Polytechnique (LM2)
 - Centre de recherche sur l'aluminium (REGAL)
 - Centre de Recherche sur les Matériaux Renouvelables de l'U. Laval (CRMR)

- Six projects relevant to the industry presented by **Audrey Laventure** (UdeM), **Élisabeth Laroche** (INÉDI), **Jaime Benavides** et **Luis-Felipe Gerlein-Reyes** (ÉTS), **Ahmad Ibrahim** (Groupe CTT), **Najoua Bader**

(Polytechnique), **Christophe Arnaud** (Solutions Novika).

- Participatory workshop on the synergy between research centres, led by Laurence Lejeune, cofounder of the Canadian Network of Scientific Platforms (CNSP).

The FQMA was a joint event by the research centre *CERMA* (U. Laval) and the strategic clusters *QCAM* and *RQMP*. Organisational partner: *PRIMA*. Collaborators: *COPL* and *2 degrés*. More information available [online!](#)

**SEE YOU IN 2025
FOR THE NEXT EDITION OF THE FQMA**

Sponsors

Fantastique



Quintessence



Ministère de l'Économie, de l'Innovation et de l'Énergie

Merveilleux



Teledyne MEMS



QCAM annual meeting (May)



Back to the traditional « in-person » format, the QCAM annual meeting took place at Victoriaville from 14 to 16 May.

This flagship event brought together 208 participants including 94 PhD students and 36 regular members. The largest delegation was from UdeS, followed by that from UdeM.

On the programme:

- 5 plenaries: **Bin Liu** (Singapore National University); **Peter Nordlander** (Rice University), **Will Chueh** (Stanford University), **Émilie Genin** (affiliate member of QCAM, University of Bordeaux), **Theresa Reineke** (University of Minnesota).
- 6 invited speakers: **Jacopo Profili** (U. Laval and KALÉGO); **Philippe Dauphin-Ducharme** (UdeS); **Mihaela Cibian** (UQTR); **Changhong Cao** (McGill); **Nhat Truong Nguyen** (Concordia); **Kulbir Ghuman** (INRS)

- 2 workshops: *Beyond the CV* (Gad Sabbatier, The 2nd Lab); *Welcoming international students* (Suzie Yeo, Autrement d'ici)
- 61 oral presentations and 86 posters. The meeting booklet is available [on the QCAM website](#).

Congratulations to the winners of the best presentation awards: **Wanting He** (INRS, nanoscience); **Abdenour Cheni** (UQTR, polymers); **Mostafa Shagar** (INRS, self-assembly); **Kevin Daoust** (UdeS, sustainable development); **Jeremy Dawkins** (McGill, energy); **Miao Liu** (INRS, bio-medical). The best poster award went to **Élodie d'Astous** (UdeS); the second place award was equally shared by **Natalia Vargas Perdomo** (Concordia); **Joseph Chiong** (Concordia); **Juan Carlos Ceballos Alvarez** (ÉTS)

SAVE THE DATE: THE 2024 MEETING IS TAKING PLACE AT U. LAVAL ON 22 AND 23 MAY

Sponsors



AMENDMENT TO THE BY-LAWS

The QCAM AGM adopted the amendment to the By-laws recognising the research professionals (RP) of QCAM as members. The RPs will also elect their representative on the QCAM infrastructure committee. The list of QCAM RPs is [available on the QCAM website](#)

International MATES summer school (July)

MATerials for Energy and Sustainability

The MATES summer school is usually organised by the University of Bordeaux. MATES partner since 2021, QCAM organised the 2023 edition, taking place at UQAM from 10 to 14 July.

MATES 2023- *From science to science policy* was a highlight of the 2023 QCAM event calendar, as it was the Centre's main international initiative. This school on materials for energy and sustainability could pride itself on two prestigious endorsements: from the steering committee of the International Year of Basic Sciences for sustainable development, and as satellite event of the France-Quebec innovation Year (AIFQ).



In addition to scientific lectures (see below), MATES 2023 emphasised the importance of communicating with decision-makers. Two specialists working at the interface between science and policy gave a talk during MATES 2023: **Marco Blouin**, General director, Science and partnerships, Ministry of Economy, Innovation and Energy and **Claudie Roy**, Science & Technology Advisor, Natural Resources Canada. In addition, **Matteo Duca** led a workshop on writing a policy brief, an essential tool for the communication with decision-makers. 12 students, including 2 from France, attended MATES 2023.

On the programme (see also the [QCAM website](#)):

- Lectures: rethinking materials for a sustainable future; energy strategy; the impact of electrification on the reduction of GHG emissions; cellulose-based materials; construction materials and sustainable cities; alternative proteins for human nutrition; biosourced materials for organic electronics
- 2 invited speakers from Bordeaux: **Guido Sonnemann**

(Material flow analysis); **Jean-Louis Bobet** (Hydrogen storage)

- Talk by Isabelle Lacroix (UdeS) on researchers' social responsibility and their influence on decision-makers
- A seminar on the UN Sustainable development goals and on how research can take them into account, by [CLAD](#) - Construire l'avenir durablement (UdeM)

We acknowledge support from the [Équipe Renard](#) (UdeM) and we also thank the Équipe Renard for providing the workshop material for policy brief writing free of charge.

MATES will take place at Bordeaux on even years and in Quebec on odd ones. The 2024 edition is slated for 1-5 July : stay tuned!



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Bulletin board

SPOTLIGHT ON OUR STUDENTS—QCAM'S RISING STARS

Several student members have received the FRQNT *Relève étoile Louis-Berlinguet* award in the last few years. Once more, let us congratulate these talented young researchers, QCAM is proud of you!

Date	Name	QCAM group
September 2023	Jalal Rahmatinejad	Ye (Concordia)
August 2023	Ahmad Al Shboul	Izquierdo (ÉTS)
July 2023	Li Shi	Rosei (INRS)
January 2023	Brenden Moeun	Hoesli (McGill)
June 2022	Thierno Mamoudou Diallo	Boucherif (UdeS)
May 2022	Daling Cui	Perepichka
November 2021	Felix Rizzuto	Sleiman (McGill)
December 2020	Casey Platnich	Sleiman-Cosa (McGill)
November 2020	Mengyang Fan	Guay (INRS)
September 2020	Laura Hernandez	Tufenkji (McGill)

IN THE MEDIA

“Our dream, is to get ahead of the coming revolution in electronics : the rise of flexible materials adapting to the shape of objects”, states our member Abderraouf Boucherif in an interview with the tech pundit Bruno Guglielminetti in his podcast [Mon Carnet](#). Prof Boucherif is co-holder of the [Umicore research chair in semiconductor nanomembranes and flexible optoelectronics at UdeS](#).

Steen Schougaard [in a radio interview](#) on his article resulting for a collaboration with another QCAM member, Janine Mauzeroll.

This work... unpicks lithium distribution in a battery during fast charging. Published in [Joule](#).

Read *La plongée dans le traitement des eaux* [A deep dive in water treatment], a portrait of our member Mathieu Lapointe by Valérie Levée published in [Plan](#) (magazine of the Order of Engineers of Quebec). Mathieu Lapointe also addressed the issue of micro- and nanoplastics pollution [in a radio interview](#).

Denis Rodrigue, a polymer forming specialist, featured as a expert in the Radio-Canada TV programme [La Facture](#).

SAVE THE DATE - THE RESEARCH PROFESSIONALS' DAY (*LE RENDEZ-VOUS DU PERSONNEL DE RECHERCHE*)

Le rendez-vous du personnel de recherche, this will be THE day dedicated to materials science research professionals (RP). This satellite event of the FQMA (see pages [5](#) et [6](#)) will showcase RPs' expertise and encourage networking.

Questions? Here are the answers!

WHAT? A day bringing together all RP working on advanced materials in Quebec, and allowing RPs to learn more about their peers' expertise. Our ambition is to create a veritable expertise network that RPs can tap into. Stronger together!

PROGRAMME : 10 talks by invited experts, professional training, a debate on the future of this RP network, and a networking session.

WHEN? On **Friday 12 April 2024**; we are also holding a welcome cocktail reception on Thursday evening for those who can join the meeting a day earlier .

WHERE? Le Dauphin Hotel at Drummondville

REGISTRATION FEE? It is **free of charge!** Participants arriving on 11 April will only have to pay their hotel room (special discounted rate: 149 \$ before taxes).

In January, we will send out more information on the detailed programme, on the link to the website, and on how to register for this event. Stay tuned!

The FQMA is co-organised by CERMA (U. Laval), QCAM and RQMP



**Forum québécois
sur les matériaux avancés**