CSACS Bulletin du CRMAA

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Centre de recherche sur les matériaux auto-assemblés
Centre for self-assembled chemical structures

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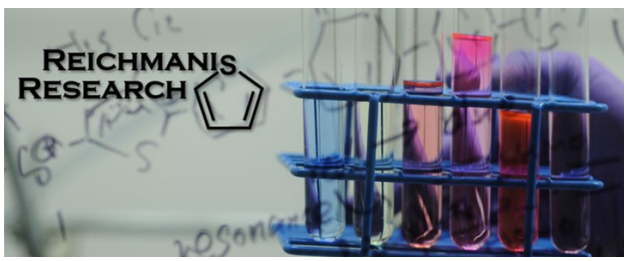
1) Séminaire/Seminar: Elsa Reichmanis

Visit: McGill (Jan. 4)/INRS (Jan. 5)
Titre: Les matériaux organiques et polymères actifs pour l'électronique flexible: un chemin vers des systèmes durables
Title: Active Organic and Polymer Materials for Flexible Electronics: a path to sustainable systems

Elsa Reichmanis
(Georgia Tech)

Résumé/Abstract:

Printed, flexible electronics have potential as low cost alternatives for devices in industries ranging from energy to health care to security. The successful introduction of these devices however, relies on the design and development of sustainable, robust and reliable materials and processes. Studies have shown that not only does device performance depend critically on semiconductor alignment at many length scales, materials' mesostructure can be manipulated in solution prior to device fabrication. Recently, it has been demonstrated that even with no perturbations, polymer semiconductors self-assemble in solution over time. Observations surrounding the behavior of these materials suggest that requisite macroscopic long-range order required for high performance devices may be achieved through process optimization which utilizes knowledge associated with materials structure-process-property relationships. Further, it has been shown that bio-derived materials may facilitate organization of conjugated materials in aqueous media thereby minimizing the use of toxic organic solvents during processing. This presentation will explore how a focus on sustainability can impact the design and development of all-printed, flexible electronic devices. Such devices present potential low cost alternatives for devices in a range of industries such as health care, security, and energy.



Nicole Avakyan (Sleiman)

FÉLICITATIONS!
CONGRATULATIONS!

Pour voir la liste complète de nos récipiendaires d'un stage international du FRQNT, cliquer ici.

To see the complete list of our past prize winners of a FRQNT international internship, click here.

Pour plus de details visitez
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2) Bourse FRQNT Internationale
International FRQNT Internship

On vous rappelle que le CRMAA dispose encore une bourse à octroyer. Les personnes intéressées sont invitées à consulter les règlements du concours. Aussi consultez notre site internet pour voir les **documents requis** pour déposer une demande auprès du CRMAA. Le prochain dépôt des candidatures du CRMAA est le **15 janvier 2017**.

We would like to remind you that one more scholarship is available for CSACS students. Those interested are invited to consult the rules. Also visit our website for the **documents required** to submit an application within CSACS. The next CSACS application deadline will be on **January 15th, 2017.**

EN RÉSUMÉ

- Montant : 2,500$/mois (max. 15,000$)
- durée du stage : 2 à 6 mois
- Annonce des résultats : 1 mois à la suite du dépôt de la demande au FRQNT

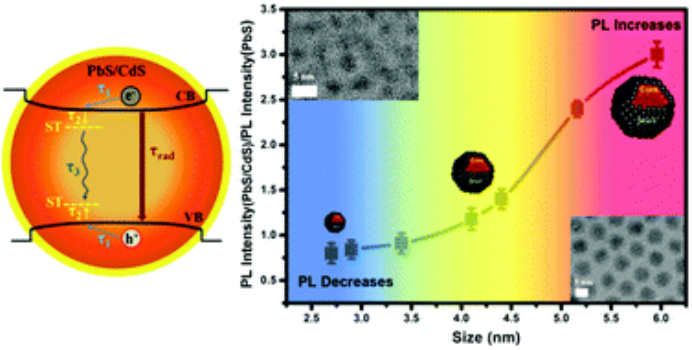
SUMMARY

-Amount : $2,500/month (max. $15,000)
-Duration : 2 to 6 months
-Announcement of results : 1 month after the reception of the application form at FRQNT

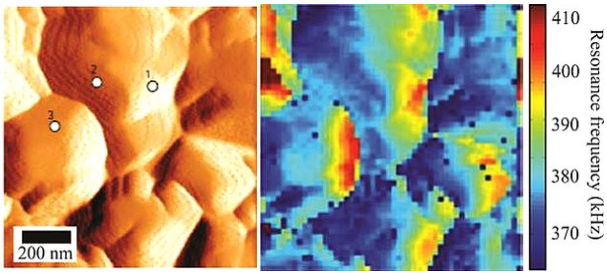
Le comité de bourses d'études du CRMAA a décerné le premier stage international 2016/2017 à Nicole Avakyan (Ph.D.) du groupe Sleiman de l'Université McGill. Nicole a mené des recherches mécanistiques détaillées sur un phénomène récemment découvert : la capacité des petites molécules à changer l'appariement des bases d'ADN en nouvelles formes. La bourse de voyage proposée pour visiter le laboratoire du Prof. Carlos Gonzalez à l'Instituto de Química Física Rocasolano à Madrid, en Espagne lui permettra d'utiliser la spectroscopie RMN avancée pour résoudre la structure du nouveau motif d'ADN.

The CSACS scholarship committee has awarded the first 2016/2017 international internship to Nicole Avakyan (Ph.D.) from Sleiman group at McGill University. Nicole has carried out detailed mechanistic investigations of a newly discovered phenomenon: the ability of small molecules to change the base-pairing of DNA into new forms. The proposed travel award to visit the laboratory of Prof. Carlos Gonzalez at the Instituto de Química Física Rocasolano in Madrid, Spain will allow her to use advanced NMR spectroscopy to solve the structure of the novel DNA motif.

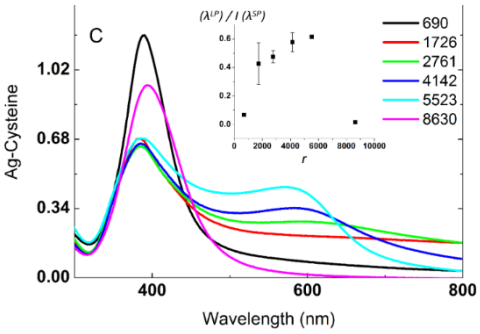
3) Publications

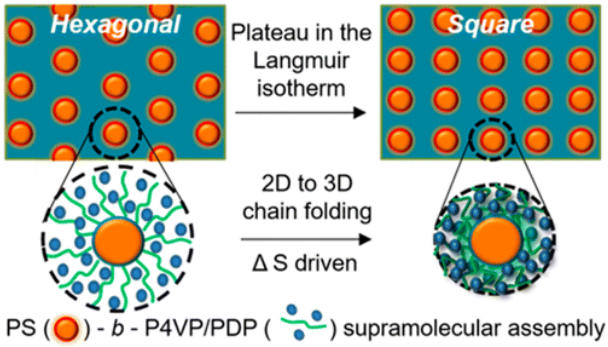


Fuqiang Ren, Sarah Lindley, Haiguang Zhao, Long Tan, Belete Atomsa Gonfa, Ying-Chih Pu, Fan Yang, Xinyu Liu, François Vidal, Jin Zhang, Fiorenzo **Vetrone** and Dongling Ma. Towards understanding the unusual photoluminescence intensity variation of ultrasmall colloidal PbS quantum dots with the formation of a thin CdS shell, *Phys. Chem. Chem. Phys.*



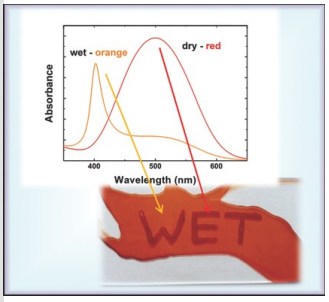
Laurence Danis, Samantha Gateman, Christian Kuss, Steen Schougaard and Janine **Mauzeroll**. Nanoscale Measurements of Lithium-Ion-Battery Materials using Scanning Probe Techniques, *ChemElectroChem*.





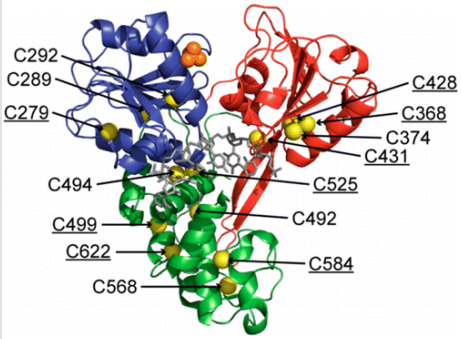
Serene Bayram, Klas Lindfors and Amy Szuchmacher **Blum**. Tunable longitudinal modes in extended silver nanoparticle assemblies, *Beilstein J. Nanotechnol.*

Marie Richard-Lacroix, Kateryna Borozenko, Christian **Pellerin** and Geraldine **Bazuin**. Bridging the Gap between the Mesoscopic 2D Order–Order Transition and Molecular-Level Reorganization in Dot-Patterned Block Copolymer Monolayers, *Macromolecules*.

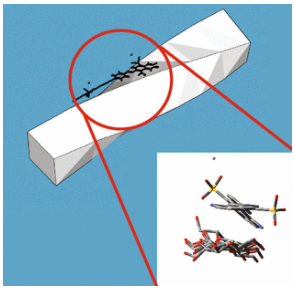


Simon Schoelch, Jaana Vapaavuori, Frédéric-Guillaume Rollet and Christopher **Barrett**. The Orange Side of Disperse Red 1: Humidity-Driven Color Switching in Supramolecular Azo-Polymer Materials Based on Reversible Dye Aggregation, *Macromol Rapid Commun.*

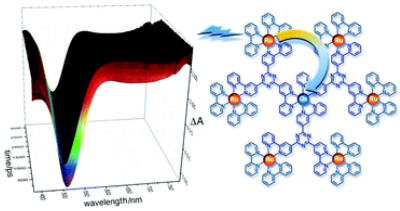
3) Publications con't



Christopher Ablenas, Hsiao-Wei Liu, Nikoloz Shkriabai, Mamuka Kvaratskhelia, Gonzalo **Cosa** and Matthias Götte. Dynamic Interconversions of HCV Helicase Binding Modes on the Nucleic Acid Substrate, *ACS Infect. Dis.*

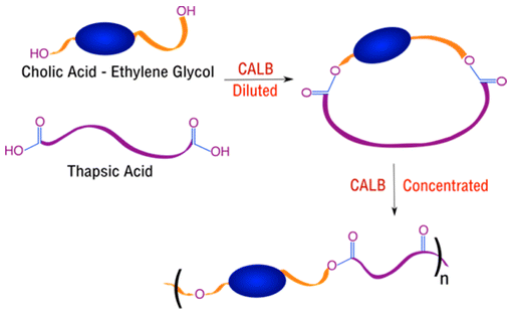


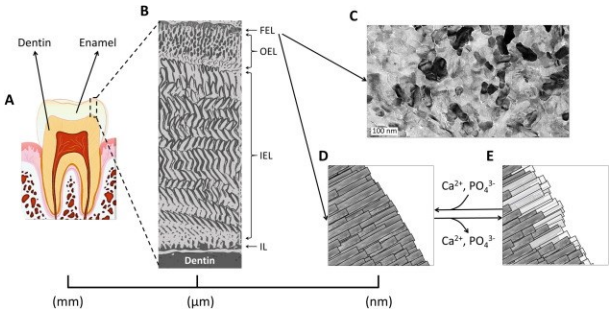
Kevin Conley, Tony Whitehead and **Theo van de Ven**. Probing the structural chirality of crystalline cellulose with induced circular dichroism, *Cellulose*.



Emanuele La Mazza, Fausto Puntoriero, Francesco Nastasi, Baptiste Laramée-Milette, Garry **Hanan** and Sebastiano Campagna. A heptanuclear light-harvesting metal-based antenna dendrimer with six Ru(II)-based chromophores directly powering a single Os(II)-based energy trap, *Dalton Trans.*

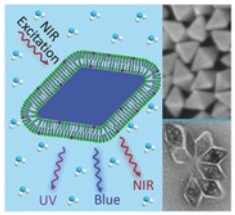
Élyse Champagne, Nicolas Lévaray and Julian **Zhu**. Two-Step Enzymatic Synthesis of Biocompatible Polymers Made from Cholic Acid, *ACS Sustainable Chem. Eng.*





Mohamed-Nur Abdallah, Hazem Eimar, David Bassett, Martin Schnabel, Ovidiu Ciobanu, Valentin Nelea, Marc McKee, Marta **Cerruti** and Faleh Tamimi. Diagenesis-inspired reaction of magnesium ions with surface enamel mineral modifies properties of human teeth, *Acta Biomaterialia.*

Paola Rojas-Gutierrez, Christine **DeWolf**, John Capobianco. Formation of a Supported Lipid Bilayer on Faceted LiYF4:Tm3+/Yb3+ Upconversion Nanoparticles, *Part. Part. Syst. Charact.*



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