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

Volume 64

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1) Colloque Annuel du CRMAA: 5 mai CSACS Annual Meeting: May 5






13^E CONFÉRENCE ANNUELLE DU CRMAA 13TH ANNUAL CSACS CONFERENCE

Conférenciers/ Speakers

-  *Joachim Spatz*
-  *Jean-François Lutz*
-  *Zhenan Bao*
-  *Benoit Marsan*

Nos commanditaires/ Our sponsors

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Appel pour les résumés / Call for Abstracts

Date limite: 19 avril / deadline: April 19

Inscription requise au <http://csacs.concordia.ca/fr/>

Registration required at <http://csacs.concordia.ca/en/>

2) Séminaire/Seminar: Paolo Samori

Visit: McGill (Mars 24)/ UdeM (Mars 25)/ INRS (Mars 26)

Titre: Apprivoiser la complexité des matériaux moléculaires dynamiques: adapter les faibles nanostructures multifonctionnelles dimensionnelles

Title: Taming complexity in dynamic molecular materials: tailoring low dimensional multifunctional nanostructures

Résumé/Abstract:

Responsive supramolecularly engineered hybrid materials are key in multifunctional (opto)electronics. However, their practical use requires the optimization of the self-assembly of multimodular architectures at surfaces using non-conventional methods, their controlled manipulation and responsiveness to external stimuli, and the quantitative study of various physico-chemical properties at distinct length- and time-scales. My lecture will review our recent findings on:

(i) The STM monitoring of the reversible on-surface reactivity under thermodynamic control making use for the first time of dynamic covalent chemistry approaches at the solid-liquid interface. We focused our attention to the double imine formation between 4-(hexadecyloxy)benzaldehyde and different α,ω -diamines as well as reversible bistransimination. In particular, we provided direct evidence of the ability of adsorption free energy to act as a physical agent that shift equilibriums and eventually drives completion of a reaction thereby selecting a given constituent of a dynamic covalent library. [1]

(ii) The harnessing of the yield of exfoliation of graphene in liquid media by mastering the supramolecular approach via combination with ad-hoc functional molecules, leading ultimately to the bottom-up formation of optically responsive graphene based nanocomposites for electronics. [2]

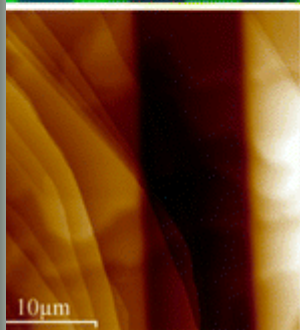
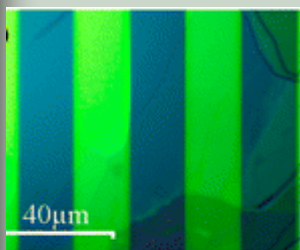
(iii) The bottom-up formation of graphene based 3D covalent frameworks with tunable intersheet distance, exhibiting large specific surface areas which determine an ability to adsorb CO_2 which is the highest reported among carbon-based materials and extremely high performance in supercapacitors.

(iv) The tailoring multicomponent films comprising photochromic systems and semiconducting molecules, and their exploitation to realise multifunctional devices such as optically switchable field-effect transistors. [3]

[1] A. Ciesielski, et al., *Nat. Chem.* 2014, 6, 1017-1023. [2] (a) A. Ciesielski, et al. *Angew. Chem. Int. Ed.* 2014, 53, 10355–10361. (b) M. El Gemayel, et al., *Adv. Mater.* 2014, 26, 4814-4819. (c) S. Haar, et al., *Small* 2015, in press. [3] (a) G. Pace, et al., *Proc. Natl. Acad. Sci. USA.* 2007, 104, 9937. (b) V. Ferri et al., *Angew. Chem. Int. Ed.* 2008, 47, 3407. (c) J. Mativetsky, et al., *J. Am. Chem. Soc.* 2008, 130, 9192. (d) N. Crivillers, et al., *Adv. Mater.* 2011, 23, 1447. (e) C. Raimondo, et al., *Proc. Natl. Acad. Sci. U.S.A.* 2012, 109, 12375. (f) E. Orgiu et al., *Nat. Chem.* 2012, 4, 675.



Paolo Samori



Appl. Mater. Interfaces, 2014,

3) Les Prix / Awards: édition Express edition

Prix en science macromoléculaire et génie

Nous sommes fiers de vous annoncer en primeur que notre collègue et professeur Julian Zhu est le lauréat 2015 du Prix en science macromoléculaire et génie (Macromolecular Science and Engineering Award) accordé par [...]

Source: [Département de chimie U. de M.](#)



Julian Zhu

Keith Laidler Award winner

Congratulations to Gonzalo Cosa, who is this year's Keith Laidler Award winner. The award will be presented to him by the Canadian Society for Chemistry, in Ottawa June 13-17, 2015. Sponsored by the CIC Physical [...]

Source: [McGill Chemistry News](#)



Gonzalo Cosa

Une bourse de la SCC

Notre collègue et professeur Jean-François Masson vient de recevoir une bourse de voyage CNC-IUPAC de la part de la Société canadienne de chimie pour assister au prochain congrès mondial IUPAC [...]

Source: [Département de chimie U. de M.](#)



Jean-François Masson

2015 Award for Research Excellence in Materials Chemistry

Sponsored by the Materials Chemistry Division, the Award for Research Excellence in Materials Chemistry is presented to a Canadian citizen or landed immigrant who has made an outstanding contribution to materials [...]

Source: [McGill Chemistry News](#)



Dima Perepichka

Chang-Jiang Scholars Award

Le professeur Federico Rosei du Centre Énergie Matériaux Télécommunications est lauréat du Chang-Jiang Scholars Award, un très prestigieux prix remis par la Chine à d'éminents chercheurs à travers le monde. [...]

Source: [Université INRS](#)

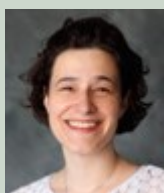


Fede Rosei

2015 Fred Beamish Award

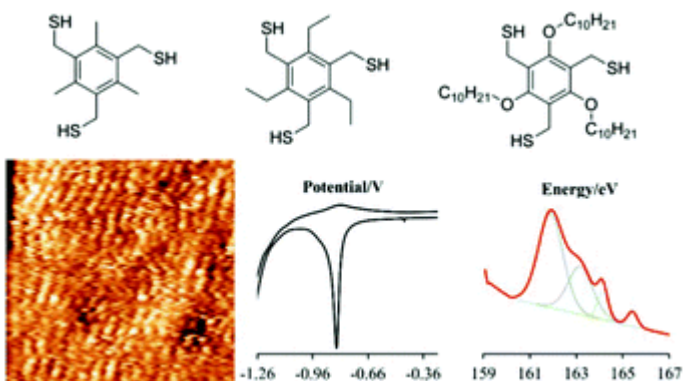
Sponsored by the CSC Analytical Chemistry Division, the Fred Beamish Award is presented to an individual who demonstrates innovation in research in the field of analytical chemistry [...]

Source: [McGill Chemistry News](#)



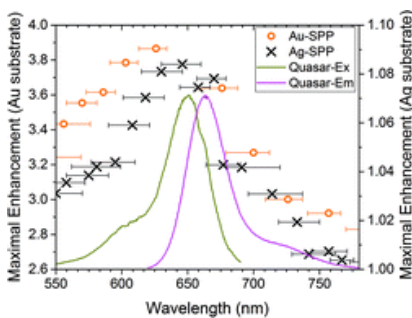
Janine Mauzeroll

4) Publications



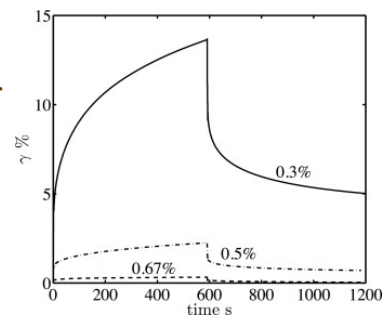
noscale, 2015, Advance Article.

Amani Hariri, Graham Hamblin, Yasser Gidi, Hanadi **Sleiman** & Gonzalo **Cosa**. Stepwise growth of surface-grafted DNA nanotubes visualized at the single-molecule level, *Nature Chemistry* (2015).



H.-P. Poirier-Richard, M. Couture, T. Brule and J.-F. **Masson**. Metal-enhanced fluorescence and FRET on nanohole arrays excited at angled incidence, *Analyst*, 2015, Advance Article.

Leila Jowkarderis, Theo **van de Ven**. Rheology of semi-dilute suspensions of carboxylated cellulose nanofibrils, *Carbohydrate Polymers* Vol. 123, pp 416–423.



Yue Huang, Federico **Rossi** and Fiorenzo **Vetrone**. A single multifunctional nanoplatform based on upconversion luminescence and gold nanorods, *Nanoscale*, 2015, Advance Article.

GNR@NaYF₄:Er³⁺, Yb³⁺

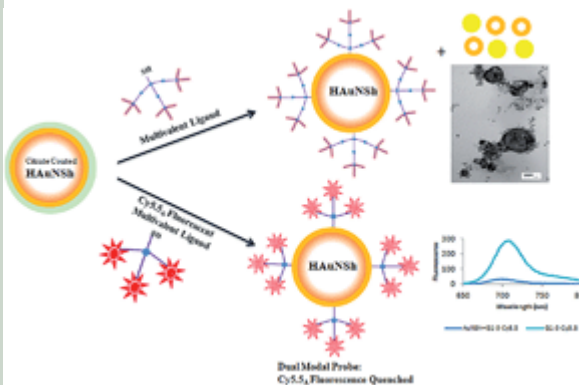
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La parution de bulletins réguliers à tous les membres joue un rôle essentiel dans les communications internes – le bulletin mensuel du Centre de recherche sur les matériaux auto-assemblés (CRMAA) souligne les activités du Centre, des messages clés et de l'information. Si vous avez des informations à communiquer ou si vous souhaitez recevoir nos bulletins, s'il vous plaît contactez-nous par courriel à csacs.chemistry@mcgill.ca

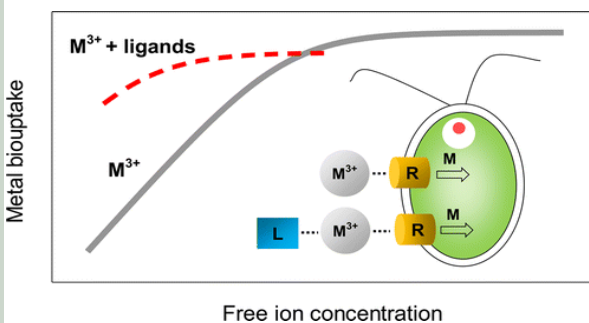
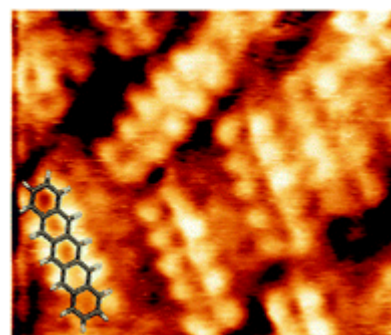
Regular newsletters to all members play a vital role in internal communications - Center of Self-Assembled Chemical Structures (CSACS) monthly newsletter highlights activities, key messages and information. If you have information to communicate or you would like to receive our bulletins, please contact us via email at csacs.chemistry@mcgill.ca

4) Publications con't



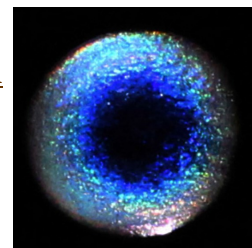
Mathieu Bédard, Pramod Avti, Tina Lam, Léonie Rouleau, Jean-Claude Tardif, Éric Rhéaume, Frédéric Lesage and Ashok **Kakkar**. Conjugation of multivalent ligands to gold nanoshells and designing a dual modality imaging probe, *Journal of Materials Chemistry B* Issue 9, 2015.

L. Dinca, F. De Marchi, J. MacLeod, J. Lipton-Duffin, R. Gatti, D. Ma, D. **Perepichka** and **F. Rosei**. Pentacene on Ni(111): room-temperature molecular packing and temperature-activated conversion to graphene, *Nanoscale*, 2015, 7, 3263-3269.



Chun-Mei Zhao and Kevin **Wilkinson**, Biotic Ligand Model Does Not Predict the Bioavailability of Rare Earth Elements in the Presence of Organic Ligands, *Environ. Sci. Technol.*, 2015, 49 (4), pp 2207–2214.

Xiaoyue Mu, Derek **Gray**. Droplets of cellulose nanocrystal suspensions on drying give iridescent 3-D “coffee-stain” rings, *Cellulose*, February 2015.



FRANCK BÉLANGER



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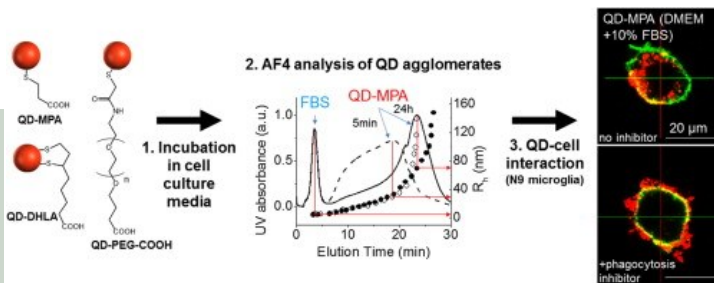
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Alexandre Moquin, Kevin Neibert, Dusica Maysinger, Françoise **Winnik**. Quantum dot agglomerates in biological media and their characterization by asymmetrical flow field-flow fractionation, *European Journal of Pharmaceutics and Biopharmaceutics* 89 (2015) 290–299.