



Guest Editorial

Alex Bain, McMaster

It started with a chance remark from one of our senior colleagues, that it was 1958 when McMaster received its first NMR

spectrometer, a Varian DP60. That seemed to be a good reason for a celebration, so on Friday May 2, we are having a one-day symposium. The web site already has a number of photos, and more will be posted.

<http://nmr50.mcmaster.ca>

Two of the pioneers, Ron Gillespie (who ordered the instrument) and Russell Bell will be there. However, we will miss two other central figures: Don Eaton and Brian Sayer, who have both passed away. The symposium also will be the day before a memorial in Winnipeg for Ted Schaefer, who was a great father figure for many of us.

The 50th anniversary event has led to lots of discussion and a number of themes. One is the progress of the field since that time. Buried in some files we found the purchase order for our Varian HA100, combined with an upgrade to the DP60, but no technical details. However, we do have the quotation and paperwork (no spectra) for our first FT system, a Bruker WH90, purchased in 1974. The proton sensitivity specification was 50:1 on 1% ethylbenzene. Today, due to higher fields, more efficient probes and better electronics, 5000:1 on 0.1% ethylbenzene is a common number: three orders of magnitude improvement in a little over thirty years. Perhaps the NMR equivalent of Moore's law should be formulated.

For some of us, the instruments are now too good. We have Varian and Bruker to thank, but ourselves to blame, I think. It is now routine for a user of a spectrometer to obtain a well-shimmed magnet, a well-tuned probe, a well-phased and integrated spectrum, possibly in

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multi-dimensions, all with little or no knowledge of how any of this works. I'm not sure that anyone really misses iron magnets, flux stabilizers and locking on the upper sideband, but there is a principle that if you are relying on an instrument, you should know how it works, at least at some level. The phenomenal stability of a modern instrument means that pulses can be calibrated once and remain stable for weeks. How many of us still insist on our students doing a quick lineshape test and 90° pulse determination before starting an experiment?

How forgiving is the NMR spectrometer? We all know that you can put random numbers as parameters into a T_1 experiment and usually still get reliable data, but T_2 is a much more fussy measurement. Both B_0 and B_1 are inhomogeneous, and pulse calibrations may be inaccurate and non-linear. The pulse shape that appears in the probe for cleverly-crafted selective pulses may not be identical to the file on the disk. However, spins are able to walk

through the beautiful almost-Gothic architecture of one of Lewis Kay's pulse programs and bring us the most exquisite information about the dynamics and structure of a protein. How does this robustness arise?

All of this leads up to how do we learn and teach NMR spectroscopy? There is a very strong contingent of young NMR people in Canada now, but what do they need to know? For my generation, we had the luxury of picking it up as it came out, but new students have to compress that 30+ years into the couple of years before their comprehensive. At one time, everything we needed was in Pople, Schneider & Bernstein, or Becker, or Emsley, Feeney & Sutcliffe, or Abragam, or Stothers. At McMaster we are currently wrestling with the number and content of graduate courses. If you are doing solids, do you need to be able to analyze an ABX? This is also a useful topic of discussion – what one book do you hand to a new student and say "Read this"?

Finally, it is always good to look back at the old literature, even if you have to go to the library for a hard copy because it is not online. One thing it teaches us is how much you could achieve with equipment which is (by modern standards) just terrible. Modern spectrometers not only allow us to get beautiful spectra, but they also must be pushed to start probing systems that we would never have thought possible. NMR has been able to constantly re-invent and renew itself, and I am sure this will continue.

Canadian NMR news

Forward us any news of interest to the Canadian NMR community.

«Hubble of nano» at l'Université du Québec à Montréal

l'UQAM has announced plans to acquire a high-resolution NMR instrument to support research at the Department of Chemistry and the Department of Biological Sciences. This acquisition has been supported by the Canada Foundation for Innovation (CFI). From the press-release, «*Avec l'acquisition de la RMN, l'UQAM rejoint le rang des grandes universités en recherche*». Congratulations to our colleagues from l'UQAM ! Follow the link to read the full story:

<http://www.uqam.ca/nouvelles/2008/08-026.htm>

NMR upgrades at the University of Victoria

The 300 MHz NMR Spectrometer in the UVic Chemistry Department gets a new console as a part of the of a \$1.04-million grant from Western Economic Diversification Canada awarded to the University of Victoria towards purchasing and upgrading scientific equipment. Read the full story here:

<http://ring.uvic.ca/08mar06/tech-transfer.html>

Submitted by Chris Greenwood (University of Victoria)

VIVA II, the 2nd annual West Coast NMR minisymposium

VIVA II, the 2nd annual West Coast NMR minisymposium will take place at the University of Victoria on Friday and Saturday, June 20-21, 2008. This 1 1/2 day meeting, modeled after the MOOT meeting of Central Canada, is designed to bring together NMR users, researchers, managers, etc., from the area, to share topics of general NMR interest. Graduate students in particular are encouraged to present papers or posters.

For further information and to register for the symposium, see the website:

<http://chemistry.uvic.ca/viva2.html>

Submitted by Rob Schurko (University of Windsor)

MOOT 21 NMR Symposium - Preliminary Announcement

The 21st Annual MOOT NMR Symposium will take place at the University of Windsor in Windsor, Ontario on October 4 and 5, 2008. The MOOT is traditionally a regional gathering of NMR spectroscopists from Ontario and Quebec; however, due to Windsor's unique geographical location at the U.S. border (right across the river from Detroit, Michigan), this MOOT will welcome not only Canadian participants, but also participants from the mid-western United States.

The MOOT NMR Symposium provides an informal environment for students, post-docs and faculty to present lectures and posters, discuss collaborations, and to socialize (i.e., to meet old friends and make new ones).

Rob Schurko (Chair, Windsor) and Philip Grandinetti (Co-Chair, The Ohio State University) welcome you to check out the MOOT website for more information.

<http://www.uwindsor.ca/moot>

We look forward to seeing you in October!

Do you use Gaussian to help interpret your SSNMR data?

Sam Adiga and Dom Aebi from David Bryce's group at the University of Ottawa have written a computer program called "EFGShield" which parses and summarizes Gaussian output files containing shielding and EFG data. The program provides results which are directly comparable to data extracted through simulations of experimental spectra using programs such as WSOLIDS (e.g., quadrupolar coupling constants, Euler angles, etc.). If you are interested, you can download the program here

<http://www.catalysis.uottawa.ca/EFGShield-download.php>

Canadian NMR blogs

Solid-State NMR Literature Blog (Rob Schurko's group, U Windsor)

<http://ssnmr.blogspot.com/>

NMR Facility Blog (Glenn Facey, U Ottawa)

<http://u-of-o-nmr-facility.blogspot.com/>

NMR Facility Blog (Tim Burrow, U Toronto)

<http://www.chem.utoronto.ca/facilities/nmr/NMRBlog/>

NMR News (Albin Otter, U Alberta)

http://nmr.chem.ualberta.ca/nmr_news.htm

NMR Theses Recently Defended

Congratulate your students here!

Héloïse Thérien-Aubin (Département de chimie, Université de Montréal) April 1, 2008

Title: "Étude de la diffusion dans les hydrogels polymères par spectroscopie et imagerie RMN" (Research director: Prof. Julian X.X. Zhu)

Prizes and Awards

Our congratulations to Canadian students working in the field of NMR spectroscopy who have been awarded **2008 Alexander Graham Bell Canada Graduate Scholarships** by NSERC

Cory Widdifield – University of Ottawa
David Bryce's group

Irene Kwan – Queen's University, Kingston
Gang Wu's group

On the move

Ramsey Ida will join the group of Simon Sharpe in the Hospital for Sick Children in Toronto as a PDF fellow. Ramsey completed his Ph.D. in NMR and computational chemistry with Gang Wu's group in Kingston (Queen's University).

Darren Brouwer, formerly with NRC-SIMS, has accepted an Assistant Professor position in the Chemistry Department at Redeemer University College in Hamilton. Darren will maintain his ties with NRC and the 900 NMR Facility to continue his research in NMR Crystallography. We wish Darren the best in his teaching and research career.

Peter Zhu, after finishing his Ph.D. in Yining Huang's group (University of Western Ontario), Peter will continue as a postdoctoral fellow with Gang Wu (Queen's University).

Chris Kirby, formerly an NMR Facility manager at the University of Western Ontario (London, ON), has accepted the position of Physical Chemist NMR Specialist in the Crops and Livestock Research Centre in Charlottetown, PEI (Agriculture and Food Canada). Best of luck to Chris at his new post !

Steven (Zhimin) Yan, formally a PDF with Yining Huang, has taken up a temporary position as an NMR instrument specialist at the University of Western Ontario (London, ON).

Andre Sutrisno joined Yining Huang's group as a graduate student at Western last September. Andre did his honors undergraduate research with Prof. Rob Schurko

at the University of Windsor. He has already started using the 900 NMR Facility in Ottawa.

We are glad to welcome **Eric Ye** who has joined the 900 team as an NMR Facility technician. Many of you will have a chance to greet Eric personally while visiting our Facility in coming months. Eric is currently finalizing his Ph.D. in solid-state NMR with Gillian Goward at McMaster.

the 900 NMR Facility News

Travel support program for students and young scientists

Students and young scientists from Canadian Universities are welcome to apply for a travel stipend towards full or partial reimbursement of their travel expenses incurred while visiting the 900 Facility. All requests should be submitted by a supervisor in advance of the trip and include a cost estimate. Requests should be forwarded to the Facility manager for review and approval by the Steering Committee.

Recent Travel Grant Recipients

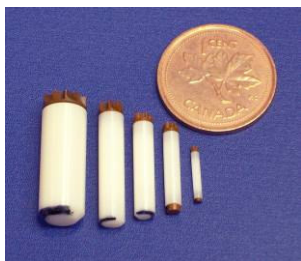
Peter Zhu (University of Western Ontario)

Fu Chen (University of Alberta)

Andre Sutrisno (University of Western Ontario)

http://nmr900.ca/policies_e.html

New NMR probes for the 900 Instrument



The 900 Team, including the Facility Steering Committee and the Facility Manager, dedicate considerable effort to ensure that the Facility remains at the forefront of NMR

research. Since 2005, when the Facility was first opened to users, the range of NMR probes available for our users has grown significantly. One of the Facility's goals is to contribute to the design and development of NMR probes for solid-state NMR research at ultrahigh magnetic fields. At the moment the Facility has a dedicated staff to design and build probes to accommodate special needs of the users. The Facility is also closely collaborating with Bruker

BioSpin in NMR probe development. We are glad to announce two more MAS probes which recently become available for users of the 900 NMR Facility. One of two probes is a Bruker 4 mm CP/MAS triple-resonance $^1\text{H}/^{13}\text{C}/^{15}\text{N}$ probe for bio-structural NMR research. Our latest acquisition, a 1.3 mm CP/MAS double-resonance $^1\text{H}/\text{X}$ probe designed and built by Bruker Biospin is the fastest MAS probe available today. A fitting probe for the strongest NMR magnet !

http://nmr900.ca/probes_e.html

Upcoming NMR Events

Let everyone know about upcoming NMR-related events at your University or Lab. NMR conference announcements are also welcome.

The 4th Annual McGill Biophysical Chemistry Symposium

May 1, 2008, McGill University, Montreal, QC
<http://www.chemistry.mcgill.ca>

"50 Years of NMR at McMaster"
one-day symposium

May 2, 2008, Hamilton, Ontario
<http://nmr50.mcmaster.ca/>

ISMRR 2008

16th Scientific Meeting and Exhibition

May 3-9, 2008, Toronto, Ontario
<http://www.ismrm.org/08/index.htm>

The 3rd Annual Solid-State NMR Workshop
at the 91st Canadian Chemistry Conference and Exhibition

May 24, 2008, Edmonton, Alberta
http://nmr900.ca/events_e.html

Symposium "Advances in Solid-State NMR"
at the 91st Canadian Chemistry Conference and Exhibition

May 25-26, 2008, Edmonton, Alberta
<http://www.csc2008.ca/>

Symposium "Protein NMR Spectroscopy"
at the 91st Canadian Chemistry Conference and Exhibition

May 25-26, 2008, Edmonton, Alberta
<http://www.csc2008.ca/>

VIVA II, the 2nd annual West Coast NMR minisymposium

June 20-21, 2008, University of Victoria
<http://chemistry.uvic.ca/viva2.html>

EUROMAR-2008

July 6-11, 2008, St. Petersburg, Russia
<http://www.euromar2008.com>

Bruker Solid-State NMR Workshop and Seminar at the 2008 Rocky Mountain Conference

July 27, 2008, Breckenridge, Colorado
<http://www.bruker-biospin.com/rmc2008.html>

19th Varian Solid-State NMR Workshop at the 2008 Rocky Mountain Conference

July 27, 2008, Breckenridge, Colorado
http://www.varianinc.com/cgi-bin/nav?products/nmr/events/solids_2008/index

2008 Rocky Mountain Conference

July 27-31, 2008, Breckenridge, Colorado
<http://www.rockychem.com/ssnmr/>

NANUC 2008 NMR Bootcamp

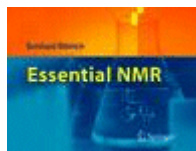
July 27-August 2, 2008, University of Connecticut, Farmington, CT
<http://www.nanucbootcamp.com/>

MOOT 21 NMR Symposium

October 4-5, 2008, Windsor, ON
<http://www.uwindsor.ca/moot/>

NMR books

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Essential NMR - for Scientists and Engineers

Berhard Blümich
Springer, Berlin (2005)

Paperback: 244 pages

Publisher: Springer; 1 edition (April 19 2005)

Language: English

ISBN-10: 3540236058

ISBN-13: 978-3540236054

Amazon.ca : "ESSENTIAL NMR is a set of lecture notes for scientists and engineers who want to brush up on their knowledge of NMR. This book is also a compendium for graduate and postgraduate students of physics and chemistry as well as for their teachers, covering all fields of NMR, i.e. NMR methodology and hardware, chemical analysis, 2D-spectroscopy, NMR imaging, flow NMR, and quality control NMR."

<http://www.amazon.ca/gp/product/3540236058/>

The Open Magnetic Resonance Journal

Following recent trends, Bentham Open Publishers specializing in open access science and technology journals has announced The Open Magnetic Resonance Journal (ISSN: 1874-7698).

The Open Magnetic Resonance Journal is an open access peer-review online journal, which publishes research articles, reviews and letters in all areas of magnetic resonance. For more information and manuscript submission instructions visit

<http://bentham.org/open/tomrj/>

Bentham Open carries a wide variety of other open access titles in chemistry and physics. Please refer to Bentham Open's website at

<http://bentham.org/open/>

NMR Jobs and Vacancies

You are welcome to post here your vacancies, openings, and related announcements. We can also post short "job wanted" requests.

University of Ottawa, Ottawa, ON

Post-doctoral NMR position is available in the laboratory of Dr. Natalie Goto, studying the structure and function of proteins important for regulating bacterial cell division. Candidates should have a background in biomolecular NMR spectroscopy and/or protein biochemistry. Funding for this position is available for up to three years. Interested applicants should email a CV along with complete contact information of 3 references to ngoto@uottawa.ca

<http://www.science.uottawa.ca/%7Engoto488/>

NRC-SIMS, Ottawa, ON

Competition number 32-07-30
Closing Date 05/30/2008

Research Officer, a continuing position focusing on establishing an innovative research program in solid-state NMR spectroscopy is available at the NRC Steacie Institute for Molecular Sciences (NRC-SIMS). For a complete official announcement and to apply online proceed to NRC website

<http://careers-carrieres.nrc-cnrc.gc.ca/>

University of Windsor, Windsor, ON

CUPE 1393 Posting Reference # 2008-13-04
Closing Date 05/22/2008

NMR Facility Coordinator position is available at the University of Windsor. The candidate will be responsible for the operation and management of the Nuclear Magnetic Resonance Facility in the Department of Chemistry & Biochemistry. The complete announcement can be found at

<http://www.uwindsor.ca/units/hr/StaffForms.nsf/ViewStaffPositions>

Listings of NMR jobs and vacancies

Canadian NMR Jobs

http://nmr900.ca/ssnmr_jobs.html

NMR jobs on the NMR Information Server

<http://www.spincore.com/nmrjobs/>

List of NMR jobs and Post-Doc positions maintained by Dror Warschawski

<http://www.drorlist.com/nmr.html>

NMR jobs on SpectroscopyNow.com

<http://www.spectroscopynow.com/coi/cda/list.cda?type=Job&chld=0>

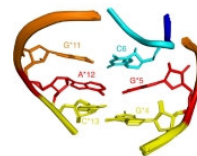
Canadian NMR Research Highlights

Research highlights and most recent NMR publications by Canadian research teams

The structure of "kissing complex" solved

David Bryce (U Ottawa) has collaborated with H el ene van Melckebeke and J er ome Boisbouvier (CNRS, Grenoble) to reveal the molecular origins of the high stability of HIV TAR RNA bound to its SELEX RNA aptamer. A

non-canonical loop-closing GA base pair was found to be stabilized by a network of intersugar hydrogen bonds, which in turn accounts for the greatly reduced dissociation constant of the complex relative to those without the GA pair. The structure of the "kissing complex" was determined using liquid crystal NMR spectroscopy, and represents one of the highest-resolution RNA structures determined in solution to date. A manuscript reporting their results has been accepted for publication in Proc. Natl. Acad. Sci. USA.



Advances in NMR Crystallography

Darren Brouwer and colleagues from NRC-SIMS have recently published several research papers exploring the emerging field of NMR Crystallography. NMR Crystallography incorporates solid-state NMR data into the crystal structure determination process in a variety of materials, i.e. zeolites. This approach becomes particularly important for materials that are difficult to grow as single crystals suitable for single-crystal X-ray diffraction.

Darren H. Brouwer, Saman Alavi and John A. Ripmeester, "NMR Crystallography of p-tert-Butylcalix[4]arene Host-Guest Complexes Using ^1H Complexation-Induced Chemical Shifts," *Physical Chemistry Chemical Physics* **10** (2008) accepted. (**Hot Article**)

Darren H. Brouwer, "NMR Crystallography of Zeolites: Refinement of an NMR-Solved Crystal Structure Using *ab Initio* Calculations of ^{29}Si Chemical Shift Tensors," *Journal of the American Chemical Society* **130** (2008) ASAP.
<http://dx.doi.org/10.1021/ja800227f>

Darren H. Brouwer and Gary D. Enright, "Probing Local Structure in Zeolite Frameworks: Ultrahigh-field NMR Measurements and Accurate First Principles Calculations of Zeolite ^{29}Si Magnetic Shielding Tensors," *Journal of the American Chemical Society* **130** (2008) 3095-3105.
<http://dx.doi.org/10.1021/ja077430a>

Darren H. Brouwer and John A. Ripmeester, "Symmetry-Based Recoupling of Proton ^1H Chemical Shift Anisotropies in Ultrahigh-Field Solid-State NMR," *Journal of Magnetic Resonance* **185** (2007) 173-178.
<http://dx.doi.org/10.1016/j.jmr.2006.12.003>

Applied Magnetic Resonance
special issue, volume 32(4), 2007
"Applications of Solid-State NMR to
Characterizing Materials"

Featuring

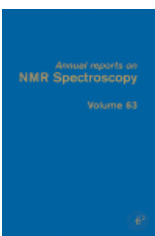
L.S. Cahill, R.P. Chapman, C.W. Kirby and G.R. Goward, "The Challenge of Paramagnetism in Two-Dimensional $^{6,7}\text{Li}$ Exchange NMR," *Applied Magnetic Resonance* **32** (2007) 565-581.
<http://dx.doi.org/10.1007/s00723-007-0046-8>

A.Y.H. Lo, J.V. Hanna and R.W. Schurko, "A Theoretical Study of ^{51}V Electric Field Gradient Tensors in Pyrovanadates and Metavanadates," *Applied Magnetic Resonance* **32** (2007) 691-708.
<http://dx.doi.org/10.1007/s00723-007-0045-9>

Annual Reports on NMR Spectroscopy
Volume 63 (2008)

<http://www.sciencedirect.com/science/journal/00664103>

Marise Ouellet and Michèle Auger, "Structure and Membrane Interactions of Antimicrobial Peptides as Viewed by Solid-State NMR Spectroscopy," *Annual Reports on NMR Spectroscopy* **63** (2008) 1-21.



Alex D. Bain, "Chemical Exchange," *Annual Reports on NMR Spectroscopy* **63** (2008) 23-48.



Progress in Nuclear Magnetic Resonance Spectroscopy

<http://www.sciencedirect.com/science/journal/00796565>

recent reviews

B. Newling, "Gas flow measurements by NMR" *Progress in Nuclear Magnetic Resonance Spectroscopy* **52** (2008) 31-48.
<http://dx.doi.org/10.1016/j.pnmrs.2007.08.002>

G. Wu, "Solid-State ^{17}O NMR Studies of Organic and Biological Molecules," *Progress in Nuclear Magnetic Resonance Spectroscopy* **52** (2008) 118-169.
<http://dx.doi.org/10.1016/j.pnmrs.2007.07.004>

O.B. Lapina, D.F. Khabibulin, A.A. Shubin, and V.V. Tersikh, "Practical Aspects of ^{51}V

and ^{93}Nb Solid-State NMR Spectroscopy and Applications to Oxide Materials," *Progress in Nuclear Magnetic Resonance Spectroscopy* **52** (2008) in press.
<http://dx.doi.org/10.1016/j.pnmrs.2007.12.001>

Magnetic Resonance in Chemistry
special issue, volume 46 (4) 2008
"Biological Materials"

<http://www3.interscience.wiley.com/journal/117924191/issue>

Featuring

A. Wong, Z. Yan, Y. Huang, and G. Wu, "A Solid-State ^{23}Na NMR Study of Monovalent Cation Binding to Double-Stranded DNA at Low Humidity," *Magnetic Resonance in Chemistry* **46** (2007) 308-315.
<http://dx.doi.org/10.1002/mrc.2136>

Recent NMR Publications

We are listing here most recent NMR publications by Canadian research groups as they appear on the www.nmr900.ca website. Although we are doing our best keeping track of your publications, this list should not be considered complete. You are encouraged to let us know of your recent publications as they become available.

Memorial University of Newfoundland

M. Sarker, A.J. Waring, F.J. Walther, K.M.W. Keough, V. Booth, "Structure of Mini-B, a Functional Fragment of Surfactant Protein B, in Detergent Micelles," *Biochemistry* **46** (2007) 11047-11056.
<http://dx.doi.org/10.1021/bi7011756>

Dalhousie University

C.D.L. Saunders, N. Burford, U. Werner-Zwanziger, and R. McDonald, "Preparation and Comprehensive Characterization of $[\text{Hg}_6(\text{Alanine})_4(\text{NO}_3)_4]\cdot\text{H}_2\text{O}$," *Inorganic Chemistry* (2008) ASAP.
<http://dx.doi.org/10.1021/ic702321d>

J.G. Longstaffe, U. Werner-Zwanziger, J.F. Schneider, M.L.F. Nascimento, E.D. Zanotto, and J.W. Zwanziger, "Intermediate-Range Order of Alkali Disilicate Glasses and Its Relation to the Devitrification Mechanism," *Journal of Physical Chemistry C* **112** (2008) 6151-6159.
<http://dx.doi.org/10.1021/jp711438v>

University of New Brunswick

B. Newling, "Gas Flow Measurements by NMR", *Progress in Nuclear Magnetic Resonance Spectroscopy* **52** (2008) 31-48.
<http://dx.doi.org/10.1016/j.pnmrs.2007.08.002>

L. Li, F. Marica, Q. Chen, B. MacMillan, B.J. Balcom "Quantitative Discrimination of Water and Hydrocarbons in Porous Media by Magnetization Prepared Centric-scan SPRITE", *Journal of Magnetic Resonance* **186** (2007) 282-292.
<http://dx.doi.org/10.1016/j.jmr.2007.03.008>

A.E. Marble, I.V. Mastikhin, B.G. Colpitts, B.J. Balcom, "A Compact Permanent Magnet Array With a Remote Homogenous Field", *Journal of Magnetic Resonance* **186** (2007) 100-104.
<http://dx.doi.org/10.1016/j.jmr.2007.01.020>

H. Peemoeller, J.A. Stanley, M.B. MacMillan, W.P. Weglarz, J.C. Bennett, M. Corbett, J.M. Hawton, R. Holly, "Hydration study of homopolypeptides by ^2H NMR", *Biopolymers* **86** (2007) 11-22.
<http://dx.doi.org/10.1002/bip.20674>

S.M. Vargas-Vasquez, L.B. Romero-Zerón, B.M. MacMillan, " ^1H NMR Characterization of HP Am/Cr(III) acetate polymer gel components", *International Journal of Polymer Analysis and Characterization* **12** (2007) 115-129.
<http://dx.doi.org/10.1080/10236660601154210>

Université Laval

M. Ouellet and M. Auger, "Structure and Membrane Interactions of Antimicrobial Peptides as Viewed by Solid-State NMR Spectroscopy", *Annual Reports on NMR Spectroscopy* **63** (2008) 1-21.
<http://www.sciencedirect.com/science/journal/00664103>

McGill University

J. Milette, C.T. Yim, L. Reven, "DNMR study of hydrophilic and hydrophobic silica dispersions in EBBA liquid crystals", *Journal of Physical Chemistry B* **112** (2008) 3322-3327.
<http://dx.doi.org/10.1021/jp077682y>

A. Dorris, S. Rucareanu, L. Reven, C.J. Barrett, and R.B. Lennox, "Preparation and Characterization of Polyelectrolyte-Coated Gold Nanoparticles", *Langmuir* **24** (2008) 2532-2538.
<http://dx.doi.org/10.1021/la703003m>

A. O'Donnell, K. Yach, and L. Reven, "Particle-Particle Interactions and Chain Dynamics of Fluorocarbon and Hydrocarbon Functionalized ZrO_2 Nanoparticles", *Langmuir* **24** (2008) 2465-2471.
<http://dx.doi.org/10.1021/la702503m>

H. Thérien-Aubin, X.X. Zhu, F. Ravenelle, and R.H. Marchessault, "Membrane Formation and Drug Loading Effects in High Amylose Starch Tablets Studied by NMR Imaging", *Biomacromolecules* **9** (2008) 1248-1254.
<http://dx.doi.org/10.1021/bm701256z>

Université de Montréal

H. Thérien-Aubin, X.X. Zhu, F. Ravenelle, and R.H. Marchessault, "Membrane Formation and Drug Loading Effects in High Amylose Starch Tablets Studied by NMR Imaging", *Biomacromolecules* **9** (2008) 1248-1254.
<http://dx.doi.org/10.1021/bm701256z>

H. Thérien-Aubin, X.X. Zhu, C.N. Moorefield, K. Kotta, G. Newkome, "Effect of ionic binding on the self-diffusion of anionic dendrimers and hydrophilic polymers in aqueous systems as studied by pulsed gradient NMR techniques", *Macromolecules* **40** (2007) 3644-3649.
<http://dx.doi.org/10.1021/ma070372t>

H. Thérien-Aubin, F. Janvier, W.E. Baille, X.X. Zhu and R.H. Marchessault, "Study of Hydration of Cross-Linked High Amylose Starch by Solid State ^{13}C NMR Spectroscopy", *Carbohydrate Research* **342** (2007) 1525-1529.
<http://dx.doi.org/10.1016/j.carres.2007.04.014>

Carleton University

G.W. Buchanan and I. Moudrakovski, " ^{19}F Magnetic Resonance Imaging Using Vesicles of Sucrose Octaoleate- F_{104} ", *Journal of Fluorine Chemistry* **129** (2008) 137-138.
<http://dx.doi.org/10.1016/j.jfluchem.2007.10.008>

University of Ottawa

Y. Yang and A. Sayari, "Mesoporous Organosilicates from Multiple Precursors: Co-Condensation or Phase Segregation/Separation?" *Chemistry of Materials* (2008) ASAP.
<http://dx.doi.org/10.1021/cm800069u>

J. Zhu, N. Trefiak, T. Woo and Y. Huang, "Investigation of Adsorption of Aromatic Hydrocarbons in Zeolite Na-Y by Solid-state NMR Spectroscopy," *Microporous and Mesoporous Materials* (2008) In Press.
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