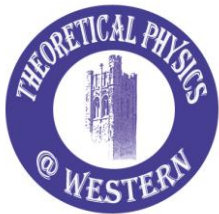


International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



NCMT-2011 Scientific Program at a Glance

	WEDNESDAY 9 MARCH	THURSDAY 10 MARCH	FRIDAY 11 MARCH
8:00-9:00		Registration	Registration
8:45-9:00			
Plenary		Chair: Shantanu Basu	Chair: Mahi Singh
9:00-10:00		P-Th Anthony Leggett	P-Fr Sajeev John
10:00-10:30		Coffee	Coffee
Session A		Chair: John Corrigan	Chair : Colin Denniston
10:30-11:00		I-Th-A1 Jean Léotin	I-Fr-A1 Michael Flatté
11:00-11:30		I-Th-A2 Jens Niegemann	I-Fr-A2 Michel Gingras
11:30-12:00		I-Th-A3 Geoff Steeves	I-Fr-A3 Federico Rosei
12:00-1:00		LUNCH	LUNCH
Session B		Chair: David Jeffrey	Chair: Giovanni Fanchini
1:00-1:30		I-Th-B1 Dmitry Smirnov	I-Fr-B1 Godfrey Gumbs
1:30-2:00		I-Th-B2 Russell Thompson	OA-Fr-B Oral-Abstracts
2:00-2:30		OA-Th-B Oral-Abstracts	I-Fr-B2 Vladimir Miransky
2:30-3:00		I-Th-B3 Michel Côté	I-Fr-B3 Boris Fainberg
3:00-3:30		Coffee	Coffee
Session C		Chair:	Public Talk Chair: Shantanu Basu
3:30-4:00		I-Th-C1 Gyaneshwar Srivastava	Anthony Leggett
4:00-5:00		OA-Th-C Oral-Abstracts	Anthony Leggett
5:00-5:30		I-Th-C2 Jean Desforges	
5:30-6:00		I-Th-C3 Alioscia Hamma	
7:00-8:30		CONFERENCE DINNER	



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



SHORT PROGRAM

Thursday March 10, 2011

Registration: 8:00-9:00

Opening Ceremony: 8:45-9:00

Plenary Session - Thursday (Chair: Shantanu Basu)

9:00-10:00 **P-Th**

Anthony Leggett, University of Illinois at Urbana-Champaign, USA
Cuprate superconductivity without a "model"

Coffee Break: 10:00-10:30

Session Th-A (Chair: John Corrigan)

10:30-11:00 **I-Th-A1**

Jean Léotin, Laboratoire National des Champs Magnétiques Intenses, Toulouse, France
Magneto-optics from Faraday to nowadays

11:00-11:30 **I-Th-A2**

Jens Niegemann, Christopher Prohm, Michael König, Timo Köllner and Kurt Busch, Karlsruhe Institute of Technology, Germany
Modeling plasmonic nanostructures

11:30-12:00 **I-Th-A3**

Geoff Steeves, Department of Physics and Astronomy, University of Victoria, Canada
Photon counting with MKID detectors

Lunch: 12:00-13:00

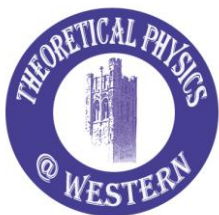
Session Th-B (Chair: David Jeffrey)

13:00-13:30 **I-Th-B1**

Dmitry Smirnov, National High Magnetic Field Laboratory, USA
High field optical magneto-spectroscopy of graphite

13:30-14:00 **I-Th-B2**

Russell Thompson, Department of Physics and Astronomy, University of Waterloo, Canada
Self-assembling nanostructures with mistakes... on purpose



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



14:00-14:30 **OA-Th-B**
(See details on oral presentation schedule on page 24)

14:30-15:00 **I-Th-B3**
Michel Côté, Nicolas Bérubé and Simon Lévesque, Département de physique,
Université de Montréal, Canada
Design of polymers for photovoltaic application: an ab initio approach

Coffee Break: 15:00-15:30

Session Th-C (Chair:)

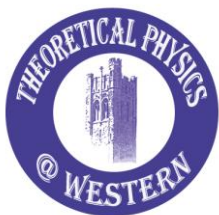
15:30-16:00 **I-Th-C1**
Gyaneshwar Srivastava, School of Physics, University of Exeter, U.K.
Theory of phonon transport in nanostructured semiconductors

16:00-17:00 **OA-Th-C**
(See details on oral presentation schedule on page 24)

17:00-17:30 **I-Th-C2**
Jean Desforges, Tahar B.-Messaoud, Luc Robichaud, Martin Leblanc and Serge
Gauvin, Département de physique et d'astronomie, Université de Moncton,
Canada
**Optical and morphological properties of zirconium oxide thin films deposited
by DC reactive magnetron sputtering: the influence of temperature and
ultraviolet irradiation**

17:30-18:00 **I-Th-C3**
Alioscia Hamma, Perimeter Institute of Theoretical Physics, Canada
Topological order at finite temperature and the quest for quantum memory

Conference Dinner: 19:00-20:30



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



Friday March 11, 2011

Registration: 8:00-9:00

Plenary Session - Friday (Chair: Mahi Singh)

9:00-10:00 **P-Fr**

Sajeev John, Department of Physics, University of Toronto, Canada

Photonic band gap materials: Light-trapping crystals

Coffee Break: 10:00-10:30

Session Fr-A (Chair: Colin Denniston)

10:30-11:00 **I-Fr-A1**

Michael Flatté, Department of Physics and Astronomy, University of Iowa, USA

Spin-photon entanglement: from a single spin to a nanomagnet

11:00-11:30 **I-Fr-A2**

Michel Gingras, Department of Physics and Astronomy, University of Waterloo, Canada

Collective phenomena in $\text{LiHo}_x\text{Y}_{1-x}\text{F}_4$ quantum ising magnet: recent progress and open questions

11:30-12:00 **I-Fr-A3**

Federico Rosei, INRS Energie, Matériaux et Télécommunications, Université du Québec, Canada

Exploring molecular assembly at surfaces

Lunch: 12:00-13:00

Session Fr-B (Chair: Giovanni Fanchini)

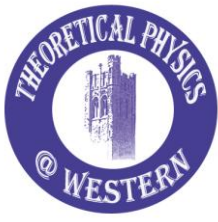
13:00-13:30 **I-Fr-B1**

Godfrey Gumbs, Department of Physics and Astronomy, Hunter College of the City University of New York, USA

Effects of electric and magnetic fields on plasma excitations and electron transport in graphene

13:30-14:00 **OA-Fr-B**

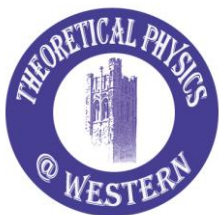
(See details on oral presentation schedule on page 24)



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



- 14:00-14:30 **I-Fr-B2**
Vladimir Miransky, Department of Applied Mathematics, University of Western Ontario, Canada
Theory of quantum hall effect in bilayer graphene
- 14:30-15:00 **I-Fr-B3**
Boris Fainberg, G. Li and A. Nitzan, Faculty of Sciences, Holon Institute of Technology, Israel and School of Chemistry, Tel-Aviv University, Israel
Coherent charge transport through molecular nanojunctions: “exciton blocking” and interplay between “exciton” and Coulomb blocking in the wire
- Coffee Break:** 15:00-15:30
- Public Talk (Chair: Shantanu Basu)**
- 15:30-17:00 Anthony Leggett, University of Illinois at Urbana-Champaign, USA
Does the everyday world really obey quantum mechanics?



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



ORAL PRESENTATION SCHEDULE

Thursday March 10, 2011

OA-Th-B

14:00-14:05

OA-Th-B1

M. Shafiq Ahmed, Faranak Sharifi, Reg Bauld and Giovanni Fanchini, Dept. of Physics & Astronomy, University of Western Ontario, London, ON, Canada
Transparent and Conducting Graphene films for Optoelectronics

14:05-14:10

OA-Th-B2

Mohammad H. Ansari and Frank K. Wilhelm, Institute for Quantum Computing (IQC), University of Waterloo, Canada
Critical current noise and junction resonators in Josephson junction from interacting trap states

14:10-14:15

OA-Th-B3

E.G. Barbagiovanni¹, D.J. Lockwood², L.V. Goncharova¹, P.J. Simpson¹,
¹Department of Physics and Astronomy, University of Western Ontario, London, Ontario, Canada, ²National Research Council Ottawa, Ontario, Canada
Effect of Crystallinity on Quantum Confinement in Si and Ge Nano-Structures

14:15-14:20

OA-Th-B4

Styliani Conostas, Department of Chemistry, University of Western Ontario, Canada
Stability of highly charged nanodroplets with respect to proton release.

14:20-14:25

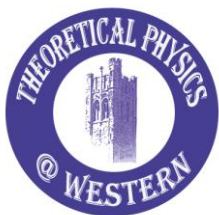
OA-Th-B5

Rajat Dey and Jayshri Sabarinathan, Department of Electrical and Computer Engineering, University of Western Ontario, Canada
Comparison Between Photonic Crystal Based Y-Junction and MMI Power Splitter

14:25-14:30

OA-Th-B6

Hossein Ismaili and Mark S. Workentin, Department of Chemistry, University of Western Ontario, Canada
Diazirine photochemistry to prepare gold nanoparticle-based hybrid materials

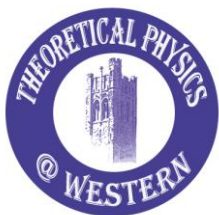


International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



OA-Th-C

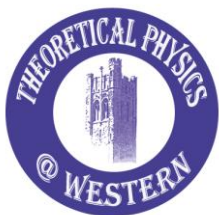
- 16:00-16:05 **OA-Th-C1**
Yeongyoon Kim and Russell B. Thompson, Department of Physics and Astronomy,
University of Waterloo, Waterloo, Ontario, Canada N2L 3G1
Testing Classical Nucleation Theory for Nano-Cellular Polymeric Foam
- 16:05-16:10 **OA-Th-C2**
Tetyana Levchenko, Christian Kübel, John F. Corrigan and Yining Huang,
University of Western Ontario, Canada
From Molecule to Materials: Crystalline Superlattices of Nanoscopic CdS
- 16:10-16:15 **OA-Th-C3**
Xiangbo (Henry) Meng, Ruying Li and Xueliang (Andy) Sun, The University of
Western Ontario, Canada
**Atomic Layer Deposition: A New Technique to Synthesize Novel
Nanocomposites for Renewable Clean Energy Conversion and Storage**
- 16:15-16:20 **OA-Th-C4**
Anil Kumar Mudraboyina and Jayshri Sabarinathan, Department of Electrical and
Computer Engineering, University of Western Ontario, Canada
Two-Channel Photonic Crystal Wavelength Splitter for Sensor Application
- 16:20-16:25 **OA-Th-C5**
Ilya G. Ryabinkin and Viktor N. Staroverov, Department of Chemistry, University
of Western Ontario, London, ON, Canada, N6A 5B7
**An explicitly correlated method for two electrons in a two-dimensional square
box**
- 16:25-16:30 **OA-Th-C6**
Daryoush Shiri¹, Jie Liu², S. S. Saini¹, C. R. (Selva) Selvakumar¹ and M. P. (Anant)
Anantram², ¹Department of Electrical & Computer Engineering, University of
Waterloo, Ontario, Canada, ²Department of Electrical Engineering, University of
Washington, Seattle, WA, USA
First Principle Study of Photoluminescence in Silicon Nanowires
- 16:30-16:35 **OA-Th-C7**
Shuhui Sun¹, Gaixia Zhang¹, Ruying Li¹, Mei Cai² and Andy X. Sun¹, ¹Department
of Mechanical and Materials Engineering, University of Western Ontario, London,
Ontario, N6A 5B9 Canada, ²General Motors R&D Center, Warren, MI 48090-9055,
USA
**Platinum Nanowire-based Highly Active and Durable Electrocatalyst for PEM
Fuel Cells**



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



- 16:35-16:40 **OA-Th-C8**
Deepak Tripathi, Lalita Bhasin, R. Uma and V. K. Tripathi, Center for Energy Studies, Indian Institute of Technology Delhi, New Delhi-110016, India
Generation of Terahertz radiation by a Gaussian laser beam in a plasma
- 16:40-16:45 **OA-Th-C9 (16:40-16:45)**
Nasrin Farhangi, Yaocihuatl Medina-González and Paul A. Charpentier, Department of Chemical and Biochemical Engineering, University of Western Ontario, London, Ontario, Canada N6A 5B9
TiO₂ nanoparticles on the surface of graphene sheets by simple sonication method for photovoltaic applications
- 16:45-16:50 **OA-Th-C10**
Chandra Sekhar Manda, Department of Physics and Astronomy, The University of Western Ontario, London, Ontario, Canada, N6A 3K7
Growth and characterization of magneto-optical materials for integrated optical isolator applications
- 16:50-16:55 **OA-Th-C11**
Pradeep Kulkarni, Rajmal Jain and Malini Aggrawal, Department of Physics, Z.B.Patil College, North Maharashtra University, Jalgoan, India
Relationship between CME dynamics and solar flare plasma
- 16:55-17:00 **OA-Th-C12**
Pavlo Pyatkovskiy, Department of Applied Mathematics, University of Western Ontario, Canada
Polarization function of monolayer graphene in a magnetic field



International Conference on Frontier Topics in
Nanostructures and
Condensed Matter Theory



ORAL PRESENTATION SCHEDULE

Friday March 11, 2011

OA-Fr-B

- 13:30-13:35 **OA-Fr-B1**
Sepideh Rezvani, Department of Chemical & Biochemical Engineering, The University of Western Ontario, Canada
A Microfluidics approach to the synthesis of novel polymeric microspheres reinforced with n-TiO₂
- 13:35-13:40 **OA-Fr-B2**
Mehrnaz Salarian and Paul A. Charpentier, Department of Chemical and Biochemical Engineering, University of Western Ontario, London, Ontario, Canada
Synthesis of TiO₂ nanofiber/PPF composites for biomaterial application
- 13:40-13:45 **OA-Fr-B3**
B.S. Bhadoria¹, Rama Shankar Yadav¹ and Sarita Singh², ¹Dept. of Physics, Bundelkhand University, Kanpur Road, Jhansi (UP) India 284128, ²Dept. of Electronics and Communication, MITS, Gole Ka Mandir, Gwalior (M.P.) India
Variation of Electronic States of Quantum Dot Structures
- 13:45-13:50 **OA-Fr-B4**
S. Arghavan and A. V. Singh, Department of Mechanical and Materials Engineering, The University of Western Ontario, London ON, Canada N6A 5B9
Free Vibration of Single Layer Graphene Sheets
- 13:50-13:55 **OA-Fr-B5 (13:50-13:55)**
Rakesh Dhote, Roderick Melnik and Jean Zu, Mechanical & Industrial Engineering Department, University of Toronto, Canada
Properties of Finite Length Shape Memory Alloy Nanowires and Dynamic Thermo-Mechanical Coupling