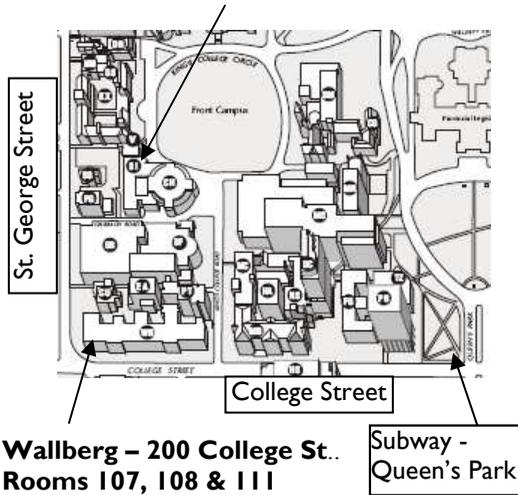


## Directions

St. George (Downtown) Campus  
Just west of Queen's Park

**Simcoe Hall –  
27 King's College Circle  
Governing Council Chambers**



For more detailed maps, including parking, visit:  
[http://www.utoronto.ca/Campus\\_Maps.htm](http://www.utoronto.ca/Campus_Maps.htm)

## Registration

Registration is free; however, we do request that you register in advance as space is limited. To register directly, please visit:

<http://register.chem-eng.utoronto.ca>

Or contact Rana Sodhi  
E-mail - [rns.sodhi@utoronto.ca](mailto:rns.sodhi@utoronto.ca)  
Phone - 416 978 1470

## Organisers

**Surface Interface Ontario** is a unique facility providing enabling information for a wide range of applications from many disciplines involved with advanced material research. Located in the Department of Chemical Engineering & Applied Chemistry at the University of Toronto, SI-Ontario actively caters to both academic and industrial interests. Fostering collaboration between universities and industry, it allows for interactions which traverse the traditional boundaries between science, engineering and medicine.

[www.si-ontario.utoronto.ca](http://www.si-ontario.utoronto.ca)

**Ontario Centres of Excellence (OCE) Inc.** drives the commercialization of cutting-edge research across key market sectors to build the economy of tomorrow and secure Ontario's global competitiveness. In doing this, OCE also fosters the training and development of the next generation of innovators and entrepreneurs, and is a key partner with Ontario's industry, universities, colleges, research hospitals, investors and governments. OCE's five Centres work in communications and information technology, earth and environmental technologies, energy, materials and manufacturing, and photonics.

[www.oce-ontario.org](http://www.oce-ontario.org)

## Other Sponsors

We wish to thank the other sponsors for their contribution to this event.

- Datacomp Scientific
- Ion-ToF USA
- KLA-Tencor
- Leica Canada
- Systems for Research
- Thermo Scientific (UK)

Surface Interface Ontario  
Department of Chemical Engineering & Applied Chemistry  
200 College St., Toronto, Ontario, M5S 3E5  
416 978 1470 / 416 978 5381  
[www.si-ontario.utoronto.ca](http://www.si-ontario.utoronto.ca)

## SI-Ontario Applied Surface Analysis

Creating Partnerships for both  
Academic and Industrial Research



Thursday,  
**March 20 | 2008**  
9:30 am - 5:30 pm  
**University of Toronto**  
St. George Campus  
Simcoe Hall / Wallberg

A Workshop organised by



Ontario Centres of  
Excellence  
Where Next Happens

## The Workshop

Surface Interface Ontario (SI-Ontario) provides enabling information to the many disciplines involved in advanced materials research. Over the years, this core-resource facility has served both academia and industry, truly "creating partnerships for innovative research". The research supported by SI-Ontario is as diverse as its client base and is of high impact. A common thread is the need for the best available surface and interface chemical information.

The surface properties of a material greatly influence its interaction with its environment. Understanding these properties is of primary importance and modern methods of surface analysis allow us to do so. Techniques such as X-ray photoelectron spectroscopy (XPS) and secondary ion mass spectrometry (SIMS) are well established as surface analytical methods. Recent advances in instrumentation, however, have made these techniques even more powerful.

This workshop outlines the advances made in these technologies which are now available at SI-Ontario thanks to recent major CFI funding. In addition to analysis, sample preparation and handling techniques are equally important in the study of surfaces. Hence, an important part of the expansion of the Facility has involved these aspects.

The workshop will be bringing in leading researchers in materials science. As well as the more formal presentations, there will be ample opportunity during the afternoon poster session for networking and discussion of more individual problems.

## Who should attend

This workshop is aimed at students, scientists and engineers in both industry and academia who are interested in utilising the types of leading edge capabilities now available at SI-Ontario either for their research, or for the solution of current or future problems. The workshop will allow researchers /industry to keep abreast with each others needs as well as with leading edge research and technology.

# The Agenda

## Workshop (Governing Council Chambers, Simcoe Hall – U of T)

- 9:30 Registration
- 9:45 Welcome – Bob Civak, OCE
- 10:00 About SI-Ontario – Charles Mims, SI-O

## Key Methods for Surface Analysis XPS/Auger/ToF-SIMS

- 10:15 Surface Analysis at SI-O  
Rana Sodhi / Peter Brodersen, SI-O
- 10:45 Angle-resolved XPS – John Wolstenholme  
Thermo Scientific, UK
- 11:15 Cluster Ion Sources for ToF-SIMS  
Albert Schneiders, Ion-ToF/Tascon USA
- 11:45 Lunch

## Keynote Speakers

- 12:30 **David G. Castner**, NESAC/BIO – University of Washington  
Material Analysis for Biomedical Research.
- 1:20 **John F. Watts**, University of Surrey, UK  
Applications of XPS, Auger and SIMS for Solving Problems in Materials Research.
- 2:10 **Peter Sjövall**, SP Technical Research Institute of Sweden, Borås, Sweden  
ToF-SIMS for Biological Research – Sample Preparation Techniques.
- 3:00 **Workshop Break**

## Opening Ceremony for the New Facility (tentative)

- 3:00 Doug Reeve, Chair, Department of Chemical Engineering & Applied Chemistry, University of Toronto.
- 3:10 Canadian Foundation for Innovation
- 3:20 Charles Mims, Director, SI-O.

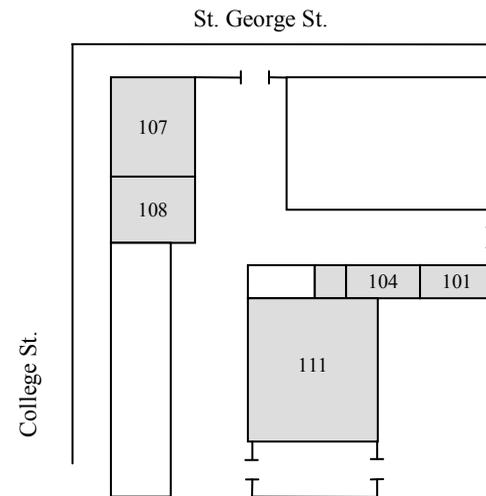
## 3:30 Workshop continued / Official Opening of the new Facility (Labs / Corridor - Wallberg)

### Demonstrations & Invited Poster Presentations

- Ion-ToF – Low Energy Ion Scattering
- Thermo – K-Alpha and ThetaProbe XPS
- Leica – Ultra-Cryomicrotoming
- KLA-Tencor – Surface Profilometry
- Datacomp Scientific
- Systems for Research
- Ontario Centres for Excellence (OCE)
- Innovation Synergy Centre Markham (ISCM)
- Academic & Industrial Presentations

### Lab tours (107, 108 & 111) & Networking Wine & Cheese Reception

#### SI-Ontario - Wallberg, 200 College



- 107 - K-Alpha, preparation, polishing
- 108 - profilometer, fume-hood, office
- 111 - ThetaProbe, ToF-SIMS, cryo-ultramicrotome
- 104 - workstations    101 - office, meeting room

# Keynote Speakers

## Dr. David G. Castner

David G. Castner, PhD, is Director of the National ESCA and Surface Analysis Center for Biomedical Problems (NESAC/BIO) and Professor of Bioengineering and Chemical Engineering at the University of Washington. He received a Ph.D. in Physical Chemistry from University of California at Berkeley in 1979. After seven years as a Research Chemist at the Chevron Research Company, Dave moved to the University of Washington in 1986. Prof. Castner became Director of NESAC/BIO in 1996. He was also the Director of the Center for Nanotechnology at the University of Washington in 2004-2005. He has an active research program in the areas of surface analysis, surface modification, biomaterials and organic thin films. Prof. Castner is active in several professional societies and has co-authored more than 150 refereed publications. He is a Fellow of the American Vacuum Society and of Biomaterials Science and Engineering. Prof. Castner received the 2004 Clemson Award for Basic Research from the Society of Biomaterials and the 2003 Excellence in Surface Science Award from the Surfaces in Biomaterials Foundation. He served on the Board of Directors of the American Vacuum Society from 2005 through 2007.

## Dr. John F. Watts

John F. Watts is Professor of Materials Science at the University of Surrey and is currently Director of the Surrey Materials Institute (SMI) and also the Centre for Materials, Surfaces and Structures in the School of Engineering. He has extensive experience in the application of surface analysis (XPS, AES, ToF-SIMS and SPM) to applied problems in materials science. His research fields include adhesion between inorganic and organic phases and their subsequent failure, and surface characterisation of polymeric materials. He has over 300 publications in adhesion and applied electron spectroscopy and has lectured widely in the UK, Europe, the USA and the Far East. He is Editor-in-Chief of the jour-

nal *Surface and Interface Analysis*, and is on the Editorial Board of the *International Journal of Adhesion and Adhesives*. He has been on the organising committees of several conferences and is currently a member of the International Steering Committee of the biennial ECASIA conference series. John is a Fellow of both the Institute of Physics and the Institute of Materials, Minerals and Mining, and a Chartered Engineer. He has won numerous awards and prizes including the Alcoa Foundation Award (1992), Robert L Patrick Fellowship of The Adhesion Society (2006) and the 3M Award for Excellence in Adhesion Science (2008).

## Dr. Peter Sjövall

Peter Sjövall is senior research scientist at SP Technical Research Institute of Sweden and an adjunct Professor in biophysical surface analysis at Lund University. He received his Ph.D. in Physics in 1992 at Chalmers University of Technology, Göteborg, Sweden, for studies of molecular processes on carbon surfaces related to combustion. Between 1992 and 1994, he enjoyed a postdoctorate research position in the group of Professor John C. Polanyi at the University of Toronto, studying surface aligned photochemistry dynamics on ionic solid surfaces. Back in Sweden, he continued to study surface reaction dynamics in simple adsorption systems at Lund University before leaving the academic environment in 1997 for a small medical device company, in which he worked with research, patent and quality issues. Since 2000, he has been responsible for the TOF-SIMS activities, involving contract work and research projects in collaboration with academia and industry, at SP Technical Research Institute of Sweden. His research at SP has been focused on the application of TOF-SIMS for chemical microanalysis of biological samples such as cells, tissues and biomimetic model systems.