Paul Corkum

Paul Corkum received his B.Sc. (1965) degree in Physics from Acadia University (Nova Scotia) and completed his Master's degree (1967) and Ph.D. (1972) at Lehigh University. After a year at Lehigh as a postdoctoral researcher, he moved to the National Research Council in Ottawa. In 1990 he formed the Femtosecond Science Group within NRC's Steacie Institue for Molecular Sciences. Over the following 17 years he led the group to world leadership in the field. In 2008 he was named Canada Research Chair of Attosecond Photonics at the University of Ottawa and appointed Director of the Joint NRC/University of Ottawa Laboratory for Attosecond Science. He holds adjunct professorships at the University of Toronto, McMaster University, the University of British Columbia and Texas A&M University.

Dr. Corkum's research launched attosecond science. After studying the interaction of intense laser radiation with atoms and molecules, he and his group proposed a method for producing and measuring attosecond pulses of light. Using this revolutionary technology, they have been able to "see" electrons, image molecular orbitals, and "watch" electrons move in a molecule as a chemical reaction takes place.

Dr. Paul Corkum is a member of the Royal Societies of Canada (1995) and London (2005). He has been the recipient of the Gold Medal for Lifetime Achievement in Physics from the Canadian Association of Physicists (1996), the Einstein Award of the Society for Optical and Quantum Electronics (1999), the Golden Jubilee Medal of Her Majesty Queen Elizabeth II (2003), the Tory Medal of the Royal Society of Canada (2003), the Charles Townes Award of the Optical Society of

3M Lecturers

1962	**Sir Derek H. R. Barton, Imperial College**
1963	Sir Ronald Nyholm, University College
1964	F. C. Tompkins, Imperial College

Prof. Corkum will present three lectures:

Monday, October 27th, 2008
4:00 p.m.
Auditorium A - University Hospital
3rd floor
(off hallway between
Dental Sciences & University Hospital)

Lecture 1
Ultrafast Lasers: The Basics

Femtosecond laser pulses are a natural tool for chemistry, because molecules vibrate and dissociate in femtoseconds. Now that we have reached the attosecond time scale many chemists worry that, since the nuclei are frozen, there is nothing of interest to chemistry to measure. In other words, are attosecond pulses simply too short?

In my first lecture I will introduce the basic concepts of femtosecond technology and describe how this has led to attosecond electron and XUV pulses. I will conclude the lecture by pointing to one unique use of attosecond technology for chemistry—measuring molecular images.