NECEM SEMINAR: “Linear and non-linear spectroscopy using quantum photons: Make Light Quantum Again!”

Prof. Eric R. Bittner, University of Houston

14:00pm-15:00pm, Wednesday 13th March 2019

Newcastle University, Bedson Building, Lecture Theatre 1.75

Refreshments available after the seminar

Abstract

“Linear and non-linear spectroscopy using quantum photons: Make Light Quantum Again!”

Recent advances in both theory and experimental technique have advanced the notion that there might be something to be gained by probing material systems with quantum photons, as opposed to more conventional laser sources. First, I shall discuss a couple of recent experiments that demonstrate that one can in fact extract ultrafast (fs) time-scale dynamics using CW sources and our theoretical methods for computing such responses. I shall propose that exciton/exciton correlations lead to the production of entangled photons. By measuring the entanglement entropy, one has a direct measure of both the magnitude and time-scale of such correlations.

Biography

Prof. Eric R. Bittner

University of Chicago Ph.D 1994
University of Texas at Austin
Postdoctoral Fellow, 1994-1996
Stanford University
Postdoctoral Fellow 1996-1997
University of Houston
Asst. Prof. 1997-2003
Asso. Prof. 2003-2008
Professor 2008-

Accolades

2018 Leverhulme Visiting Professorship, Durham Univ.
2016 Fellow of the Royal Society of Chemistry
2016 Fellow of American Physical Society
2012 Fulbright Canada Fellow
2009 John and Rebecca Moores Professorship
2008 UH Research Excellence Award
2007-2008 Guggenheim Fellow
2003 Int. J. Quantum Chemistry Young Investigator Award
1999 NSF CAREER Award
1995-1997 NSF Postdoctoral Fellow

Location
Newcastle University, Bedson Building, Lecture Theatre 1.75

See attached map: https://www.ncl.ac.uk/media/wwwnclacuk/whoweare/files/campus-map.PDF