

DR. NICOLASRENAUD

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PREVIOUS POSITIONS

- Jan. 2013** **Post Doctoral Fellow,**
Current Delft University of Technology,
Department of Chemical Engineering
Optoelectronic Material Group.
- Area of Focus *singlet fission in organic crystals, photoinduced charge transfer in molecular systems, optoelectronic properties of advanced materials such as perovskites, semiconductor nanostructures and metal-organic frameworks*
- Advisor Dr. Ferdinand C. Grozema
- Jan. 2010** **Post Doctoral Fellow,**
Dec. 2012 Northwestern University,
Department of Chemistry &
Non-Equilibrium Energy Research Center.
- Area of Focus *energy and charge transfer in bio-molecules, molecular electronics, multidimensional spectroscopy, mechanical properties of complex molecules*
- Advisor Prof. Mark A. Ratner

EDUCATION

- 2006 – 2009** **PhD in Nanoscience,** Université Paul Sabatier, Toulouse, France.
Obtained with the felicitation of the committee
- Thesis *Quantum Hamiltonian Computer: toward a symbolic analysis of quantum circuits*
- Supervisor Dr. Christian Joachim
- 2004 – 2006** **M.Sc. in Physics, Nano-Physics,** Université Paul Sabatier, Toulouse, France.
Scored 17.2/20, ranked #2
- Thesis *Quantum Hamiltonian Computer*
- Supervisor Dr. Christian Joachim
- 2000 – 2004** **B.Sc. in Fundamental Physics,** Université Paul Sabatier, Toulouse, France.
- Thesis *Parallel Kinetic Monte Carlo, application to epitaxial growth*
- Supervisor Prof. Nicolas Combe

SHORT TERM RESEARCH VISITS

- April. 2011** **McGill University, Montreal Canada,** Department of Physics.
- Area of Focus *Ab-initio techniques for electronic transport at the nanoscale*
- Advisor Prof. Hong Guo
- Feb. 2011** **Hebrew University, Jerusalem, Israel,** Department of Chemistry.
- Area of Focus *Numerical techniques for dissipative wave packet dynamics*
- Advisor Prof. Ronnie Kosloff
- March 2010** **JNCASR Institute, Bangalore, India,** Theoretical Sciences Unit.
- Area of Focus *Charge transport in strongly correlated materials*
- Advisor Prof. Swapan K. Pati

TEACHING ACTIVITIES

2015 – 2016 **Lecturer**, Delft University of Technology, Delft, The Netherlands.
Numerical Techniques for Chemical Engineering
Creation of a new programming course in Python for undergraduate students
14 hours of lecture and 28 hours of practicals
Nominated for the Teacher of the Year Award for this course

Jan. 2013 **Invited Lecturer**, Physics Winter School, les Houches, France.
Quantum Resources and Molecule-machines
6 hours of lecture for graduate and post graduate students

2006 – 2009 **Teaching Assistant**,
Université Paul Sabatier, Toulouse, France.
Practicals of classical and modern optics to Bachelor students
Practicals of classical and quantum mechanics to Bachelor students
Practicals of visual programming (labView) to Master students
Lectures and practicals of programming (UNIX - C) to Bachelor students

SUPERVISION OF STUDENTS

2013 – current **Supervision of Post Doctoral, PhD and Master Students**,
Delft University of Technology, Delft, The Netherlands.
Fatemeh Mirjani, Post Doc., *Theory of Singlet Fission in Molecular Crystal*
Sudeep Maeshwari, PhD Student, *Theoretical Description of Perovskites*
Yaroslav Aulin, PhD Student, *Singlet Fission in Molecular Crystal*
Nathalie Grozac, PhD Student, *Photoinduced charge transfer in DBA molecule*
Magnus Frederiksen, Master Student, *Theoretical Description of Perovskites*

2013 – Current **Project Supervisor of Bachelor Students**,
Delft University of Technology, Delft, The Netherlands.
Vincent Jansen, Bachelor Student, *Molecular Dynamics Simulations of Perovskites*
Nienke vd Meijden, Bachelor Student, *Electronic Structure Calculations of Quantum Dots*
Robin Buitendijk, Bachelor Student, *Electronic Structure Calculations of Quantum Dots*
Hugo Montfort, Bachelor Student, *Optical Properties of Metal-Organic-Frameworks*
Dennis Alders, Bachelor Student, *Optical Properties of Metal-Organic-Frameworks*

2010 – 2014 **Supervision of Undergraduate and Graduate Students**,
Northwestern University, Evanston, Illinois, USA.
Daniel Powell, Graduate student, *Charge transfer in biomimetic molecules*
Bryan Lau, Graduate Student, *Non-Adiabatic wave-packet propagation*
Jason Hutchinson, Undergraduate Student, *Charge transport in single molecule junctions*

2008 – 2009 **Supervision of PhD Student**,
CEMES-CNRS, Toulouse, France.
Mathilde Portais, Master Student, *Level Repulsion and Boolean Algebra*