

John Rozen, Ph.D.

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Birth Date : May 3rd, 1980

Citizenship : Belgium

Immigration Status : Non-Resident Alien (F-1 Visa OPT)

Qualifications and Objectives J. Rozen is a Research Associate at Vanderbilt University, located in Nashville, TN. He has degrees in engineering, physics, and materials science. The interdisciplinary nature of his curriculum has allowed him to develop a wide range of skills that have been successfully applied to research on material properties and semiconductor devices. His achievements include: talks at international conferences, successful interactions with funding agencies, and publications in peer-reviewed journals. His previous experiences have proven that he is a fast and versatile learner, a patient and effective teacher, and that he is dedicated to the quality of his work. He aspires to further strengthen his knowledge not only in science but also in management and social communication.

Education

Ph.D. in Materials Science (2008), Vanderbilt University, Nashville TN, USA.
- Thesis Title: *Electronic Properties and Reliability of the SiO₂/SiC Interface*.

M.S. in Materials Science (2005), Vanderbilt University, Nashville TN, USA.
- Thesis Title: *Properties of Nanocrystalline Vanadium Dioxide*.

D.E.A. (M.S. equivalent) in Physics (2003), Université Libre de Bruxelles, Brussels, Belgium.

B.S. in Physics (2002), Université Libre de Bruxelles, Brussels, Belgium.
- Thesis Title: *NMR Studies of Molecular Dynamics in Fullerene Crystals*.

Civil Engineer Candidate Degree (2000), Université Libre de Bruxelles, Brussels, Belgium.

Research Experience

2008 - present Research Associate, Institute of Nanoscale Science and Engineering, Vanderbilt University
- Research Area: Oxide/Semiconductor interfaces, optimization of device performance and reliability
- Responsibilities: Conduct research, write proposals, represent group, assist junior members, management
- Achievements: Publications, talks at international meetings, interactions with funding agencies

2003 - 2008 Research Assistant, Interdisciplinary Materials Science Program, Vanderbilt University
- Research Area: SiO₂/SiC interface quality and reliability, Vanadium Dioxide thin films
- Achievements: Design and implementation of experimental setups (oxidation station, photo-injection, TDDDB, CV, LabView automation...), publications, talks, proposals

2001 - 2003 B.S./M.S. Student, Solid State Physics Laboratory, Université Libre de Bruxelles, Belgium
- Research Area: Solid State NMR studies of C₆₀ compounds
- Achievements: Implementation of complex custom c++ code to model molecular dynamics, talks, papers

Teaching Experience

2006 - 2007 Mentoring of senior undergraduate student in Physics pursuing Honor Thesis at Vanderbilt

2002 - 2003 High school Physics teacher, Institut Universalis, Brussels, Belgium

2001 - 2002 Teaching Assistant, Physics laboratories, Université Libre de Bruxelles, Brussels, Belgium

Skills

Device fabrication: oxidation, etching, evaporation, sputtering, lithography, PLD, PECVD...

Characterization: CV, IV, TDDDB, charge injection, ellipsometry, RBS, X-ray, AFM, SEM, NMR, Hall effect...

Computing: C++, MPI, LabView, HTML, Mathematica, LaTeX, Taurus, Igor... Windows & Linux, MS Office...

Languages: English (proficient), French (proficient), Dutch (intermediate), Japanese (beginner)

Selected First Author Publications and Talks

- *Increase in oxide hole trap density associated with nitrogen incorporation at the SiO₂/SiC interface.* *J. Appl. Phys.* **103**, 124513 (2008).

- *Suppression of interface state generation upon electron injection in nitrated oxides grown on 4H-SiC.* [Appl. Phys. Lett. 91, 153503 \(2007\).](#)
- *Two-dimensional current percolation in nanocrystalline vanadium dioxide films.* [Appl. Phys. Lett. 88 \(8\), 081902 \(2006\).](#)
- *Dynamical model for the C₅H₅ cycles in the C₆₀·2 Fe(C₅H₅)₂ solvate,* [Phys. Rev. B 70, 144206 \(2004\).](#)
- ✓ *Suppressed electron-induced interface state generation and enhanced hole trapping in nitrated gate oxides on n-type 4H-SiC.* [2007 ICSCRM International Conference on Silicon Carbide and Related Materials \(Otsu, Japan\).](#)
- ✓ *Impact of nitridation on negative and positive charge buildup in SiC gate oxides.* [2007 ISDRS International Semiconductor Device Research Symposium \(College Park MD, USA\)](#)
- ✓ *Percolation effects in networks of vanadium dioxide nanocrystals.* [2006 APS March Meeting of the American Physical Society \(Baltimore MD, USA\).](#)