

Summer Student 2011

Project: Modeling of charge transport in amorphous semiconductors with application to medical imaging

Description: Impact ionization in amorphous semiconductors is an unusual phenomenon with promising applications and challenges for the theory. Our current focus is on modeling of this phenomenon in amorphous selenium taking into account its electronic structure and interaction of charge carriers with lattice vibrations. You will be involved in creation of algorithms, programming, performing calculations, and data processing. You will be introduced to the density functional theory, which is a state of the art technique in theoretical solid state physics. Students inspired by our research program are welcome to stay for their Master thesis. Students accepted into the summer program are encouraged to present a seminar by the end of the term. A successful candidate will be encouraged to apply for NSERC [Undergraduate Student Research Awards](#).

Qualification: Undergraduate students in Physics or Engineering (university program) with a good background in physics, mathematics, and programming. A potential candidate should comply with the NSERC eligibility criteria (see <http://www.nserc-crsng.gc.ca/...> for details). Basic knowledge of solid state physics and principles of quantum mechanics is appreciated, though it is not mandatory.

Details: Starting date - May, 2011; duration - 16 weeks; job hours - 37.5 hrs/wk; wage - 11.0-12.5 CAD/hour

Application: Please e-mail cover letter, resume, and **transcript** to:
Dr. Oleg Rubel
Scientist TBRI
290 Munro
Thunder Bay, Ontario P7A 7T1
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Deadline: January 1st, 2011