IEEE Award for Cornell PhD thesis in SRF

We are proud to announce that Alexander Romanenko is the winner of the 2011 IEEE Nuclear and Plasma Science Society Particle Accelerator Science and Technology Doctoral Student Award (established in 2008).

The award is intended to recognize significant and innovative technical contributions to the field of particle accelerator science and technology as demonstrated in a student’s doctoral thesis.

The citation for the award is:

“For contributions to the physics and materials science of superconducting niobium radio-frequency resonating cavities, in particular for discovering subtle structural changes that occur during low-temperature baking.”

The prize includes $2000 and a plaque, which will be given out at the award ceremony on Thursday, March 31 in the 2011 Particle Accelerator Conference in New York.

The topic of Alexander’s PhD thesis (2009) at Cornell was to use surface analysis techniques to understand the cause of the high field Q-drop and the baking benefit in niobium cavities. Alexander’s major discovery was that dislocations in niobium crystals play a strong role in the physics of the high field Q-slope by becoming centers for excessive rf magnetic flux entry. His work showed that dislocations heal with the mild baking which cures the high field Q-slope.

Alexander also earned one of the two SRF09 prizes at the Berlin International SRF conference in September 2009.

His advisor at Cornell was Hasan Padamsee.