



Theoretical Division
Theoretical Chemistry and Molecular Physics

Antonio Redondo, Ph. D.
Group Leader
Los Alamos National Laboratory
T-12, MS B268
Los Alamos, New Mexico 87545
Phone: (505) 667-9738
FAX: (505) 665-3909
e-mail: redondo@lanl.gov

Date: Fri, Nov 5, 2004

Dear Search Committee,

It is a pleasure to write in support of Dr. **Artëm Masunov's** application for a faculty position your department.

I first met Artëm in 2002 when he came to work in our group as a postdoctoral research associate with Dr. Sergei Tretiak, who is a technical staff member in the group. Artëm is a somewhat unusual postdoc in our group because he spent a number of years as a research scientist in the Department of Chemistry at Moscow State University before coming to the United States to pursue a Ph.D. This experience, in one of the primary research institutions in Russia, is apparent in his excellent preparation, his maturity and his independence.

The work that Artëm has carried out in our group is first class. In the short period of time he has been here he has developed theoretical techniques and implemented computer programs to extend the Kohn-Sham formalism of density functional theory to treat strongly-correlated electron systems. He has also implemented a code for two-photon absorption cross-section calculations (based on time-dependent density functional theory) that runs in the Gaussian suite of electronic structure programs. He has published two papers on the subject. Using these techniques he carried out calculations of solvent effects on UV-visible absorption and radiative lifetimes in organic chromophores. One of his most important conclusions on this work is that explicit counterions were crucial to explain the experimental data. This work is in the process of being submitted in a third paper together with an experimental collaborator.

Artëm is currently working on Raman spectra of carbon nanotubes, and has just implemented a code for both resonance and off-resonance intensities. The nanotube work is part of a Los Alamos-University of California grant that he wrote almost by himself. It has been funded for the fiscal year 2005, which started on 1 October 2004. Artëm has also supervised two student interns. This work has resulted in one paper just published and one preparation.

Artëm is more than ready to take a faculty position. He has many exciting ideas and a lot of initiative. He is constantly exploring new research possibilities with other staff in our group and elsewhere in the Laboratory. He is a hard worker and has an excellent background in chemistry and physics. He has a joyful disposition and is easy to talk to. He is a good team player, always willing to work with other people so that the job gets done in the most efficient manner. His presentations are lucid, well prepared and logically sound and in perfectly understandable English. He has the potential to become a leader in research. He is energetic and creative and should have no problem establishing a sound and successful research and teaching program.

Sincerely,

Antonio Redondo
Group Leader