

Molecular Spectroscopy and Magnetism – *funded* – position open immediately

Applications are encouraged for an open and fully funded, jointly-mentored postdoctoral position in the groups of Prof. Henry La Pierre, Prof. Martin Mourigal, and Prof. Zhigang Jiang at the Georgia Institute of Technology. This position is also supported via a collaboration with Prof. Stephen Hill at Florida State University and the Nation High Magnetic Field Laboratory. The position can be based in either Atlanta, GA or Tallahassee, FL. The latter base of operations would give the candidate direct and regular access to the pulsed EPR facilities in the lab of Prof. Hill at the NHMFL. Theoretical support and analysis will be led by Prof. Xiaosong Li (University of Washington).

This project will elucidate the mechanisms of decoherence driven by spin-phonon coupling in *f*-element (lanthanide and actinide) molecular nanomagnets. The research will leverage synthetic, spectroscopic (synchrotron, neutron scattering, electron-paramagnetic resonance, magneto-infrared, and magneto-Raman spectroscopies), magnetometric, and theoretical techniques to generate cohesive and predictive models of spin-phonon relaxation processes. Further details of the experimental program are available as part of the application process.

The postdoc candidate would ideally have considerable expertise in the experimental planning, acquisition, and analysis of DC and AC magnetometry and/or pulsed or variable-field/frequency electron paramagnetic resonance spectroscopy studies. Preferably, the candidate would also have experience and/or expertise in one or more of the following spectroscopies: X-ray absorption/emission, inelastic neutron scattering, and/or magneto-optical (IR/Raman). However, these complementary techniques should be viewed as growth opportunities and significant training and support in these spectroscopies are a core part of the postdoctoral training program. Opportunities to participate in the synthetic program are also available, but are not central to this position. Alternatively, a background in theoretical chemistry and modeling properties probed by these techniques paired with a keen interest in learning the acquisition and analysis of experimental data may also be a model for success in this position.

All candidates would benefit from a familiarity with how typical laboratory characterization methods, including NMR, CW EPR, UV/vis/NIR and electronic absorption analysis, and X-ray diffraction, relate to the analysis of the advanced spectroscopies and magnetometry studies. However, significant support for analyte synthesis and characterization will be provided as part of the collaboration. Most likely, the successful candidate will hold a PhD in Inorganic Chemistry or Condensed Matter Physics, but related backgrounds in Materials Science, Chemistry, and Physics will be considered.

Furthermore, the candidate must be a strong group citizen and take a keen interest in the training of other group members and the successful completion of key operations of the group. Strong candidates will exhibit significant basic science understanding, motivation, and an ability to originate, carry out, and publish significant original research in collaboration with their mentors.

The position is open immediately with the fastest possible start time in August 2022. Longer timelines will be considered as appropriate for the successful candidate (as late as June 2023). The minimum starting salary is \$55,000 a year plus benefits (higher initial salaries may be possible depending on qualifications and ongoing internal funding initiatives). The initial contract will be for 1 year, but it is renewable up to a total of 3 years.

Application Instructions

For initial discussion, the candidates should provide a CV with a publication list and a cover letter/email describing *briefly* their (1) research accomplishments, (2) potential research interests, and (3) their career goals (~3 paragraphs total). If the candidate has this information as a formal cover letter and research summary, these materials are welcome, but are not necessary. For further consideration and potential conferral of a formal offer, the candidate will need to provide three letters of reference (*only* upon request and *after* initial application review and discussion with Prof. La Pierre). These materials should be sent to Prof. Henry La Pierre at hsl@gatech.edu. Please include “GT QIS Spectroscopy PD Position” in the subject line of all correspondence.