



The University of Texas at Austin
Department of Physics
College of Natural Sciences

Post-doctoral position on electron-phonon interactions in the Giustino research group

Job Summary

Applications are invited for one Postdoctoral Research Fellowship in the Giustino research group within the Oden Institute for Computational and Engineering Sciences and the Department of Physics, University of Texas at Austin.

This position is sponsored by the U.S. Department of Energy within the context of a broader project aimed at enabling exascale calculations of electron-phonon couplings and materials properties at finite temperature:

<https://www.oden.utexas.edu/about/news/574>

Applicants must have a Ph.D. in physics, chemistry, or materials science, with a strong background in electronic structure calculations based on density-functional theory and beyond.

Areas of interest include, but are not limited to: *ab initio* calculations of carrier transport, electron-phonon physics in quantum materials, phonon-assisted optical processes, first-principles calculations of polarons, and many-body approaches to the electron-phonon problem.

Our recent work in these areas can be consulted at:

<http://giustino.materials.ox.ac.uk/index.php/Site/Publications>

The candidate will be involved in the development and the application of new theoretical and computational methods for investigating electron-phonon physics from first principles. New methods will be implemented and released into the EPW code of the Quantum Espresso distribution.

The successful candidate will have a solid knowledge of electronic structure methods and condensed matter theory, and will be familiar with density-functional theory codes. Previous experience with electron-phonon physics and with Fortran/MPI programming are desirable.

The appointed candidates will join the Giustino group within the Oden Institute and the Department of Physics at UT Austin. The candidate will have access to cutting-edge high performance computing resources provided by TACC, the Texas Advanced Computing Center. TACC is located minutes from the UT campus and hosts Frontera, the 5th most powerful supercomputer in the world.

This position is for up to three years, starting as soon as possible.

For more information on this project, please feel free to contact:

Feliciano Giustino, Ph.D.

W. A "Tex" Moncrief, Jr. Chair in Quantum Materials Engineering,

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How to Apply

Interested applicants should send a *cover letter* and a *curriculum vitae*. These documents should be combined in a single PDF file and sent to Kay Brown: kay@oden.utexas.edu.

Applicants should also arrange for *two confidential reference letters* to be sent directly to Kay Brown at the same address.

Review of applications will begin immediately, and will continue until the positions are filled. Unsuccessful candidates will be notified via email.

Additional information

Qualifications

Applicants must have a Ph.D. in physics, chemistry, or materials science, and prior experience in *ab initio* calculations based on density-functional theory and beyond.

General Notes

The position is initially for one year, renewable for up to three years based upon availability of funding, work performance, and progress toward research goals.

Background Checks

A criminal history background check will be required for finalist(s) under consideration for this position.

Employment Eligibility Verification

If hired, you will be required to complete the federal Employment Eligibility Verification I-9 form. You will be required to present acceptable and original [documents](#) to prove your identity and authorization to work in the United States. Documents need to be presented no later than the third day of employment. Failure to do so will result in loss of employment at the university.

Equal Opportunities

The University of Texas at Austin, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action. The University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, or veteran status in employment, educational programs and activities, and admissions.