

## ANNOUNCEMENT

### Scholarship for postdoctoral training at the Department of Science and Technology

At the [Department of Science and Technology](#) a scholarship has been established for foreign citizens with a PhD or equivalent acquired in another country than Sweden. Such a scholarship is now announced in the field of “Chemical Theory and Spectroscopy” entitled “Rational design of Molecular Probes with Single-Luminophore Dual Thermally Activated Delayed Fluorescence for Enhancing Time-Resolved Imaging Information”. Supervisor is Dr. Glib Baryshnikov, [Laboratory of Organic Electronics](#).

#### Description of the project

Time-resolved (TR) fluorescence imaging based on the probes possessing thermally activated delayed fluorescence (TADF) has been emerging. However, most of the developed TADF probes produce one emission signal only. This project aims to achieve a series of single-luminophore dual TADF molecules employing computational design of donor-acceptor-donor1 triads. This involves accurate determination of electronic states energy and subsequent estimation of rate constants for radiative and non-radiative transitions within four-state manifold ( $S_1$ ,  $T_1$ ,  $S_2$ ,  $T_2$ ). Together with common DFT and TDDFT methods, the advanced ab initio methods should be used for excited states calculations. The subsequent photophysical calculations of rate constants for radiative and nonradiative electronic transitions between states of the same multiplicity (fluorescence and internal conversion) and various multiplicity (phosphorescence and intersystem crossing) are required. Successful candidate should have basic knowledge in UV-Vis absorption/fluorescence spectroscopy and in quantum chemistry. The experience in working with most popular software for quantum-chemical computations like GAUSSIAN, TURBOMOLE, DALTON, GAMESS-US, VASP etc. is strongly recommended. The candidates experienced in MOMAP software are prioritized.

The scholarship is 27 000 SEK/month for up to two years.

The following criteria apply to the allocation of the scholarship:

- Scholarship may be granted only to foreign citizens with a PhD or equivalent acquired in another country than Sweden.
- Scholarship may not consist solely of research collaboration with a mutual exchange of methodological and technical expertise but must also contain a well-defined training element.

Scholarship are offered tax free and are not eligible for sick or maternity pay. A scholar is not covered by the occupational injury insurance, but is covered by the Work Environment Act. Scholarship remuneration is tax-exempt and does not give any pension rights to the applicant. A scholarship is covered by the State Group and Individual insurance (GIF), but each applicant should be aware of their own insurance needs and requirements. Scholars are not employed and therefore not covered by any collective agreements.

### **Applications**

The following documents must be submitted when applying for the scholarship:

- Application letter
- Curriculum vitae with relevant copies of reviews
- Copy of passport

The application must state whether the applicant receives or has received other scholarship or has been employed at Linköping University. Note that a scholar may not receive any other remuneration (including allowances and other fringe benefits) from the university than the scholarship during the scholarship period.

Information is provided by Glib Baryshnikov, [glib.baryshnikov@liu.se](mailto:glib.baryshnikov@liu.se)

The application and other documents, the applicant wishes to refer to, are submitted to [hr@itn.liu.se](mailto:hr@itn.liu.se), no later than by 1<sup>st</sup> August 2021.