



## Post Doc scholarship available in strong coupling between excitons and photons

Chemists can today synthesize virtually any molecule imaginable. By fine tuning the molecular structure, optimized physical, chemical, or biological properties are routinely achieved. However, even though molecular optimization has reshaped the world we live in, there is always a point at which the laws of physics limits the performance of molecular systems. Tailoring of molecular properties can be achieved through strong coupling between molecular states and the zero-point fluctuations of the electromagnetic field (vacuum field). The formed hybrid states (exciton polaritons) have unique chemical and physical properties and can be viewed as a linear combination of light (vacuum field) and matter (molecules). You will study the basic properties and potential use of these hybrid states to help create the materials for tomorrow.

### *Light-matter coupling*

You will pursue research at the cutting edge of chemistry, physics and materials science. The project, will explore strong coupling between light with matter as to create hybrid systems with unique chemical and physical properties. The goal is to strongly couple excitons with photons as to modify excited state relaxation pathways in molecular systems. Laboratory work will focus on substrate manufacturing and testing. You will work independently within the context of the research. The successful application should have a background in chemistry or physics. Her/him should be a specialist in optical spectroscopy. Knowledge within physical chemistry, optics, organic molecules, molecular materials, photonics, and solid state physics is a merit.

### *How to apply*

Written application, including reference number (E 2018/82), is to be sent via e-mail ([karl.borjesson@gu.se](mailto:karl.borjesson@gu.se)) and must include the following: CV, Personal letter stating the reasons why the study suits the applicant (maximum one page), List of publications, and two References

### *Additional information*

- Visit our homepage for more information about the molecular materials group: [www.molecularmaterials.se](http://www.molecularmaterials.se)
- Application deadline: 28th of February.
- The scholarship covers a period of 12 months with possibility of prolongation up to a maximum of 24 months in total.
- Start date according to agreement, but earliest 1<sup>st</sup> of July 2018
- Size of scholarship: 23 000 SEK/month
- Scholarships do not give rise to sickness benefits, compensation from the Social Insurance Office or retirement pension.
- The scholarship sum is paid out quarterly.
- Scholarships are tax-exempt.
- A scholarship holder cannot be hired after the scholarship period due to tax reasons.