

Postdoctoral scholarship in Organic Photonics and Nanooptics

(Reference number: Dnr ITN-2023-00409)

at the Laboratory of Organic Electronics, Department of Science and Technology, Linköping University (Campus Norrköping)

Research environment

The Organic Photonics and Nanooptics group is an international team led by Prof. Magnus Jonsson. We develop and study novel nanooptical materials and concepts, including [tuneable organic plasmonics](#), [cellulose-based radiative cooling](#), and [structural colors for reflective displays](#). More information can be found at www.mpjonsson.com and at liu.se/en/research/organic-photonics-and-nano-optics.

Our research group is part of the Laboratory of Organic Electronics (LOE) at Linköping University (LiU). At LOE, we explore electronic and optical properties of organic semiconductors, biomaterials from the forest, and hybrid organic materials. Application areas include sensors, displays, nanooptical devices, printed electronics, bioelectronics, and energy devices. Our research and capabilities span the range from synthesis and theory and modeling to device physics and system design. Likewise, our activities include the whole chain from basic research to commercialization, the latter carried out in close collaboration with the research institute RISE. LOE currently has around 130 researchers and PhD students, divided into around 10 research groups, each led by a principal investigator. Read more at www.liu.se/loe.

Postdoc scholar research project:

The Organic Photonics and Nanooptics group has an opening for a postdoctoral scholar to join our research on *dynamic plasmonics and metasurfaces based on conducting polymers and other organic materials*. The project involves nanofabrication in a cleanroom environment and characterisation of samples by optical spectroscopy and other means. The experimental part of the project may be complemented by optical simulations and theory, such as the design of phase-gradient metasurfaces. Our recent reports on these topics include:

Chen et al. *Nature Nanotechnology* 2019, www.nature.com/articles/s41565-019-0583-y

Karki et al. *Advanced Materials* 2022, onlinelibrary.wiley.com/doi/10.1002/adma.202107172

Karki et al. *Communications Materials* 2022, www.nature.com/articles/s43246-022-00268-w

Kang et al. *Advanced Science* 2022, onlinelibrary.wiley.com/doi/10.1002/adv.202201907

Chen and Jonsson. *ACS Photonics* 2023, pubs.acs.org/doi/10.1021/acsp Photonics.2c01847

Duan et al. *Advanced Materials* 2023, onlinelibrary.wiley.com/doi/full/10.1002/adma.202303949

Qualifications and requirements of the applicants:

- Scholarship may be granted only to non-Swedish citizens with a PhD or equivalent acquired in another country than Sweden. The applicant must not have been previously employed by Linköping University.
- The applicant must have or be about to receive a PhD degree in a subject relevant to the

research project (e.g. physics or materials science) and needs to be passionate about research. Problem solving ability and creativity are essential, as well as good oral and written communication skills in English.

- Relevant expertise areas include: optical metasurfaces, nanooptics, conducting polymers and other organic electronic or redox-tunable materials.
- Relevant skills include: Design, fabrication and characterization of phase-gradient metasurfaces; polymerization and materials development; redox-based devices; electron-beam lithography; nanofabrication and cleanroom work; device fabrication; optical characterization (ellipsometry, optical spectroscopy, metasurface characterisation, etc.), electrical and electrochemical characterization; general materials characterization methods (AFM, SEM, etc.), and optical simulations (e.g. FEM, FDTD).

Appointment and Conditions:

- The scholarship amounts to SEK25000:-/month (tax-free, ~€2500/month). Economy class travel to/from Sweden for a scholarship holder will be covered. Funding can be available to participate in conferences.
- Appointment is initially for one year with possibility of extension for a second year upon mutual agreement.
- Essential information about healthcare, insurances etc. can be found [here](#). Questions are welcome to HR@itn.liu.se
- Starting date summer or autumn 2024, or by agreement

Application procedure:

The following documents should be submitted as *one combined pdf document*:

- 1. Cover letter: max 2 pages. Describe your background, what makes you interested in this particular position and how you could contribute to the research and team
- 2. CV: Including contact details to three references and explanations how they know you
- 3. Full publication list: State all details, including complete author list for each publication
- 4. Copies of: Undergraduate (BSc, MSc) transcripts with grades, PhD diploma, and passport

The application should be submitted by email as *one combined pdf document* to Prof. Magnus Jonsson at magnus.jonsson@liu.se, with copy to xing.xing@liu.se and registrator@itn.liu.se. Please mark your application with “*Postdoc scholar application, ref: ITN-2023-00409*” in the email subject field.

Deadline to apply for this postdoc scholarship is *11th of February 2024*.

Contacts:

Prof. Magnus Jonsson, research group leader, vice-head of LOE, magnus.jonsson@liu.se
Martina Klefbeck, HR representative, HR@itn.liu.se