

JOB DESCRIPTION

A research position is offered at *Light-on-a-Chip* group of Ben-Gurion to a researcher (M.Sc., Ph.D. or post-doc) from the field of photonics. The research will focus on developing a new architecture for optical cloak on a CMOS compatible nitride platform overlaid by metamaterial (Figure 1) with the aim to explore the evanescent field distortion on a chip based on telecom technology. The work involves physical analysis, numerical modeling (COMSOL, Lumerical) and experimental optical measurements. Depending on skills of the applicant, the focus will be either: 1) on numerical simulations and theoretical models, 2) or on the fabrication of optical components in Si₃N₄, 3) or on experimental work. The optical cloaks developed in this project will be used in ‘in-line’ optical experiments in collaboration with other *Light-on-a-Chip* group members and will serve as the heart of new camouflaging (Figure 2) chips. Accordingly, we are looking for team-players who can work in an interdisciplinary group.

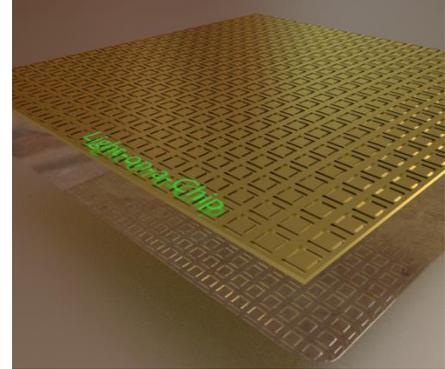


Figure1 Gold metamaterial for cloaking used by *Light-on-a-Chip* Group at BGU.

The position is fully funded for 2 years. For candidates with the appropriate background, we will offer our support in writing an application for the prestigious Marie Curie fellowship. For more information, see www.alinakarabchevsky.com

DESIRED SKILLS AND EXPERIENCE



Figure 2 Camouflaging cloaks form a central plot element in Samuel R. Delany's 1975 novel *Dhalgren* and the *Harry Potter* series of novels by J.K. Rowling. Harry uses the cloak to sneak into forbidden areas of the school.

The candidate should have an experience in the field of photonics with strong background in electromagnetism. The position may be fulfilled by MSc, Ph.D. student or by a postdoc. Specific experience with integrated photonics, metamaterials, fiber optics, numerical modeling or fabrication is highly relevant. A degree in electrical engineering, optical engineering, physics, mechanical engineering, or biomedical engineering is required. The candidate should have already taken a course in optics and familiar with electro-optical components such as waveguides, modulators, polarization-dependent components and others and possess a general understanding of wave phenomena. Some hands-on experience with optical equipment is required.

To apply for this job, please contact Dr Alina Karabchevsky alinak@bgu.ac.il; Line: 08-6479720; Cell: 053-2232299

ABOUT THE EMPLOYER

The *Light-on-a-Chip* laboratory is dedicated for exploring, designing, fabrication and optical measurements of integrated nanophotonic and plasmonic systems for emerging applications such as sensing, quantum computing, optics telecommunication and more. The group maintains strong international links with EU partners. It is a part of Electrooptical Engineering Unit at Ben-Gurion University (BGU) and Ilse Katz Institute for Nanoscale Science and Technology at BGU. State-of-the-Art facilities at *Light-on-a-Chip* include equipment for in-line measurements and characterization of guided wave devices for development light based technologies on a chip. The *Light-on-a-Chip* laboratory possesses necessary office space for accepting new group members and has access to the cleanroom facilities of the Nanocentre at BGU, as well as the state-of-the art integrated photonics devices laboratory and server based computational resources. BGU is one of Israel's leading research universities and among the world leaders in many fields. The University is ranked 46th in the world rankings of universities with sustainable policies.

