Postdoctoral fellow position on inverse and AI assisted design of nanophotonic devices

Description: As demands for performance and integration continue to increase, the design and optimization of nanophotonic devices have become computationally expensive and time-inefficient. Advanced and intelligent computational methods hold great potential to revolutionize development in many applications. They will make it feasible to use algorithms to examine complex models to exploit the enormous parameter space in a highly efficient manner. Optimization methods search the full parameter space for each targeted task by minimizing the cost function, providing a more efficient framework for achieving complex and novel functionalities. The superior features of nanophotonic structures will be introduced to the literature via the inverse and intelligent design methods to exploring new possibilities for light manipulation at the subwavelength scales. Important applications in designing novel devices, discovering new phenomena, and revealing underlying mechanisms are the objectives of this study.
The aim of the work is to use inverse design along with Artificial Intelligence to implement novel nanophotonic structures operating at the visible and near-infrared regions of the spectrum. The project also targets the nanofabrication and optical characterization of the nanostructures.

Applicant is invited for a full-time postdoctoral researcher to join the Metaphotonics Research Group in the School of Electrical Engineering at the KAIST, Daejeon, for two years (with a possibility to be extended) starting at the earliest on April 1st, 2021.

Qualifications requirements:
The highly motivated applicant is required to hold a PhD degree in Electrical Engineering, Physics, or closely related fields with specialization in one or more of the following topics: nanophotonics design tools such as Lumerical or COMSOL, nano- and microfabrication and optical characterizations, optimization algorithms, and machine learning.
The applicant should have a relevant publication record, ability to conduct independent research, and proficiency in oral and written English.

Application: send a current CV, the list of publications, a one-page summary of PhD thesis, and two recommendation letters to hamzakurt@kaist.ac.kr
Applications will be reviewed as they are received until the position is filled.