

UNIVERSITY OF CALIFORNIA, IRVINE
THE DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

Is Proud to Host a Seminar by:

ASSISTANT PROFESSOR
MAXIM SHCHERBAKOV

Department of Electrical Engineering and
Computer Science
University of California, Irvine

Thursday, May 4, 2023

2:00-3:20 PM

Location:

McDonnell Douglas Engineering Auditorium

Optoelectronic Nanomaterials—Towards On-Chip Photonics Beyond CMOS

Abstract: Nanotechnology has enabled decades of progress in CMOS electronics. However, the looming crisis of Moore's law calls for alternative platforms for on-chip data transfer and storage. We will discuss the recent developments in photonic and optoelectronic nanomaterials. We will demonstrate the thermomechanical engineering of van der Waals materials, a platform for phonon-polaritons in nanostructured MoO_3 , and all-optical control over the state of two-dimensional magnets. We will conclude by discussing the capabilities and core competencies of Shcherbakov Nanophotonics Lab and summarize our near- and long-term plans.

Bio: Maxim Shcherbakov is an assistant professor at the UCI Department of Electrical Engineering and Computer Science and the UCI Beckman Laser Institute & Medical Clinic. Dr. Shcherbakov was a postdoctoral associate with the School of Applied and Engineering Physics at Cornell University from 2016 to 2021. He received his M.S. and Ph.D. in Physics from Lomonosov Moscow State University, Russia. As a deputy group leader at Samsung Advanced Institute of Technology, his research focused on wearable electronics, remote sensing, and LiDARs. He is an author of more than 50 research papers and book chapters and is the recipient of awards in photonics, telecommunications, and nanotechnology, including the Blavatnik Regional Postdoctoral Award and the DARPA Young Faculty Award.