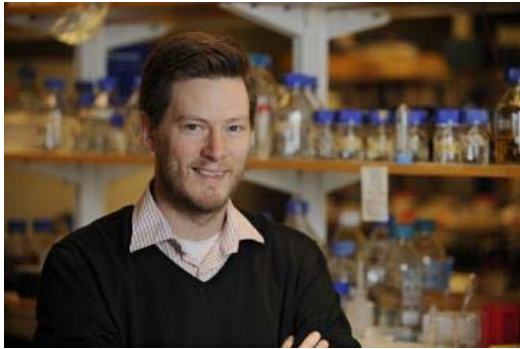




Birck Nanotechnology Center



Dr. Leósson received his Ph.D. from the Technical University of Denmark in 2001. He co-founded the plasmonics startup company MMP in Denmark where he worked as a process development engineer until 2004. From 2005 he was a senior research scientist at the University of Iceland. Since 2014 he has held the position of general manager at Innovation Center Iceland, a government-funded industrial R&D and business support institute. He is currently working with several tech startups in different fields, including electrochemical catalysis, laser-induced breakdown spectroscopy and algae cultivation.

Metasurface Polarimetry

Dr. Kristján Leósson

Friday, July 6th
11:30am – 12:30pm
BRK 2001

Optical metasurfaces consisting of arrays of metal nanoantennas have been used to construct fiber-coupled full Stokes polarimeters operating at telecom wavelengths. The compactness of the metasurfaces allows polarimeters to be integrated directly on fiber facets. By measuring four or more scattered signals from the metasurface, the polarization state of the incident light can be determined. In order to circumvent the inherent wavelength dependence of the device response, polarimeters were calibrated using deep neural networks, enabling accurate polarization measurements to be performed across the telecom c-band without a-priori knowledge of the incident wavelength.