Abstract: This talk will contain two parts. In the first part, I will discuss our recent work on graphene-based electrostatically tunable plasmonic metamaterials, including graphene antidot array plasmonic crystals, hybrid metamaterials consisting of graphene plasmonic resonators strongly coupled to noble metal based split-ring resonators, as well as surface-plasmon-assisted tunable THz emission from graphene. In the second part, I will present some of the technologies we developed over the past few years for enhancing the overall device performance (efficiency, power, spectral purity) of mid-infrared quantum cascade lasers.

Biography: Peter Qiang Liu is currently a postdoctoral research fellow associated with the Institute for Quantum Electronics and the Department of Physics at ETH Zurich. He obtained his B.E. in Electronic Engineering from Tsinghua University in 2007, and PhD in Electrical Engineering from Princeton University in 2012.