# HL 96: Invited Talk Arash Rahimi-Iman

Time: Thursday 15:00–15:30 Location: POT 051

**Invited Talk** HL 96.1 Thu 15:00 POT 051

**An Electrically Driven Polariton Laser** — •Arash Rahimi-Iman — Present Address: Department of Physics and Material Sciences Center, Philipps-Universität Marburg, Renthof 5, 35032 Marburg, Germany

A new type of electrically pumped semiconductor laser has been demonstrated which promises an energy efficient laser operation. In a *polariton laser*, stimulated scattering of bosons into a common particle energy state—an effect closely related to Bose-Einstein condensation of atoms—is exploited to provide a coherent emission of light. The involved polaritons are bosonic quasiparticles which arise from strong light-matter coupling in quantum-well microcavities. Unambiguous evidence of polaritonic condensate emission under electrical pumping has been provided by magneto-optical experiments. This presented breakthrough study has been performed by a team of researchers from the University of Würzburg and their international partners from the United States, Japan, Russia, Singapore, Iceland and Germany:

[C. Schneider, A. Rahimi-Iman, N. Y. Kim, J. Fischer, I. G. Savenko, M. Amthor, L. Worschech, V. D. Kulakovskii, I. A. Shelykh, M. Kamp, S. Reitzenstein, A. Forchel, Y. Yamamoto and S. Höfling, *Nature* **497**, 348 (2013)]