

12th International Conference and Exhibition on **Materials Science and Chemistry**
&
30th World **Nano Conference**

May 20-22, 2019 Zurich, Switzerland

Photonic crystal hybrid lasers

Liam O'Faolain^{1,2}

¹Cork Institute of Technology, Ireland

²Tyndall National Institute, Ireland

Energy efficient Wavelength Division Multiplexing (WDM) is the key to satisfying the future bandwidth requirements of datacentres. As the silicon photonics platform is regarded the only technology able to meet the required power and cost efficiency levels, the development of silicon photonics compatible narrow linewidth lasers is now crucial. We discuss the requirements for such laser systems and report the experimental demonstration of an external-cavity hybrid lasers consisting of a III-V Semiconductor Optical Amplifier and a silicon based Photonic Crystal (PhC) based resonant reflectors.

Biography

Liam O'Faolain is Deputy Director of the Centre for Advanced Photonics and Process Analysis at the Cork Institute of Technology. He received his PhD degree from the University of St Andrews in Scotland in 2005. In 2012, he joined the group of Prof. David A. B. Miller at Stanford University as an SU2P entrepreneurial fellow (www.su2p.com) before returning to begin an ERC Starting Grant and take up a lecturing position at St Andrews at the start of 2013. In August 2016 he re-located his research group to Cork Institute of Technology. His group's main research goals is the realisation of a new family of low power optical interconnects using Nanophotonics. He is the author/co-author of more than 100 journal papers, receiving over 400 citations per year. His "h"-factor is 42...

Notes: