



Scottish Universities Physics Alliance

Solid-state Raman lasers: a tutorial

Prof Jim Piper

Professor of Physics and Deputy Vice-Chancellor (Research), Macquarie University, Sydney, and Carnegie Centenary Professor 2006, Heriot-Watt University, Edinburgh

Crystalline Raman lasers have recently attracted widespread international interest for development of wavelength-versatile lasers sources in the near infrared and visible. High-average power ($>10\text{W}$), high pulse energies ($>1\text{J}$), and conversion efficiencies approaching the quantum limit have been demonstrated in the near-infrared, as well as multiwatt average powers in the visible. Prof Piper will introduce the theory and background of crystalline Raman lasers and review recent international advances with an emphasis on all-solid-state intracavity Raman lasers, including intracavity frequency-doubling for visible generation. Very recent developments of all-solid-state cw visible sources based on crystalline Raman lasers will also be covered.

Professor Piper has a 35-year record of research in lasers, including high-power UV-VIS gas lasers, dye lasers and solid-state lasers. He has extensive knowledge also in application of lasers in biomedicine, microfabrication and defence. He is author or co-author of some 260 international journal articles and full-length conference papers and co-inventor of 15 awarded patents, and has supervised some 30 PhD students to completion. Prof Piper is a Fellow of the Optical Society of America and has received a number of awards for his contribution to laser research, including most recently the award of the 2006 Carnegie Centenary Professorship by the Carnegie Trust of the Universities of Scotland, and an Honorary DSc by Heriot-Watt University.

**SUPA VC rooms,
Monday 30 October at
5 p.m.**

Please contact kasia@supa.ac.uk to confirm your attendance and make sure the tutorial will be videoconferenced to your institution

