

## **Integrated SOA Devices for Metro System Applications**

R.V. Penty, I.H. White, A.R. Davies, J. Sosabowski and K.A. Williams  
Cambridge University Engineering Department,  
Trumpington Street, Cambridge CB2 1PZ, UK  
Tel: +44 1223 767029 Fax: +44 1223 767032 e-mail: rvp11@eng.cam.ac.uk

This paper will describe various applications for semiconductor optical amplifiers for metro applications. These applications include post and pre-amplification as well as more advanced functions such as gating and switching. It will show how the requirements for cascadability in future systems will necessitate the use of gain clamped SOAs and will describe a novel form of integrated gain-clamped SOA that allows variable gain. It will finally introduce a novel technique for controlling the output power of SOAs via monitoring of the SOA contact voltage without the need for any optical measurement.