

Postdeadline Paper Session

Thursday, 16 July 2009

6:18 p.m. – 7:42 p.m.

Room S228

ThPD1 • 6:18 p.m.

1.55- μ m VCSEL Transmission Performance up to 20 Gb/s for Access Networks, *L. Xu^{1,3}, W. Hofmann², H. K. Tsang¹, R. V. Penty³, I. H. White³, M. C. Amann²*; ¹The Chinese Univ. of Hong Kong, China, ²Technische Universität München, Germany, ³Univ. of Cambridge, UK. We experimentally demonstrate for the first time 1.55 μ m vertical-cavity surface-emitting laser (VCSEL) transmission over 6.5 km single mode fiber (SMF) at 20 Gb/s for optical access networks. Characterization of the device is also investigated.

ThPD5 • 6:54 p.m.

CW pumped wavelength conversion of 40 Gb/s DPSK and 160 Gb/s OOK signals in a Chalcogenide glass chip, *M.D. Pelusi¹, F. Luan¹, S.J. Madden², D.-Y. Choi², D.A.P. Bulla², B. Luther-Davies², and B.J. Eggleton¹*; ^{1,2}ARC Centre for Ultrahigh bandwidth Devices for Optical Systems (¹IPOS, School of Physics, Univ. of Sydney, Australia, ²Laser Physics Centre, Australian National Univ., Australia). We demonstrate broadband wavelength conversion of amplitude and phase-shift keyed signals at 40-160 Gb/s using the optical Kerr-effect in a photonic chip for the first time. This is enabled by a dispersion-shifted, highly nonlinear As₂S₃ waveguide.

ThPD8 • 7:30 p.m.

Real-Time 3Gb/s 16QAM-Encoded Optical OFDM Transmission over 75km MetroCor SMFs with Negative Power Penalties, *X.Q. Jin, R.P. Giddings, J.M. Tang and K.A. Shore, Bangor Univ., UK*. Real-time optical OFDM (OOFDM) transceivers with advanced channel estimation are experimentally demonstrated, which support 3Gb/s over 75km SMF transmission with negative power penalties of -2dB in directly-modulated-laser-based IMDD systems without in-line optical amplification and dispersion compensation.

ThPD3 • 6:30 p.m.

Wavelength and repetition rate tunable mode-locked laser at up to 640 GHz using reconfigurable wavelength selective switch, *Jochen Schröder and Benjamin J. Eggleton, Univ. of Sydney, Australia*. We demonstrate the first wavelength and repetition rate tunable mode-locked fiber laser at ultra-high repetition rates of up to 640 GHz. The mode-locking is based on dissipative four-wave mixing with a reconfigurable wavelength selective optical switch as the spectral filter.

ThPD6 • 7:06 p.m.

High-resolution optical sampling by means of dispersion-shifted highly nonlinear chalcogenide waveguides, *Jürgen Van Erps^{1,2}, Feng Luan¹, Mark D. Pelusi¹, Tim Iredale¹, Steve Madden³, Duk-Yong Choi³, Douglas A. Bulla³, Barry Luther-Davies³, Hugo Thienpont², and Benjamin J. Eggleton¹*; *Univ. of Sydney, Australia, ²Vrije Universiteit Brussel, Belgium, ³Australian National Univ., Australia*. We demonstrate a photonic-chip-based optical sampling system with temporal resolution <500-fs, making use of a 7-cm short chalcogenide planar waveguide. Its high nonlinearity and dispersion-shifted design enables broadband operation without compromising the achieved resolution.

ThPD4 • 6:42 p.m.

Fast Power Control and Wavelength Switching in a Tunable SOA-Integrated SGDBR Laser, *Hui Lv¹, Tan Shu¹, Yonglin Yu¹, Dexiu Huang¹, Lei Dong² and Ruikang Zhang²*; ¹Hazhong Univ. of Science and Technology, China, ²Accelink Technologies Co. Ltd., China. We demonstrate fast optical power control and wavelength switching in a tunable SOA-integrated SGDBR laser. With our design, output power of the laser can be precisely controlled within 0.1 dB and rapidly shuttered within 2 ns.

ThPD7 • 7:18 p.m.

1.28 Tb/s Single Wavelength Star-16-QAM Transmission over up to 800 m of Graded-Index Multimode Fibre, *Ronald E. Freund, Dirk-Daniel Groß, Reinhold Ludwig, Carsten Schmidt-Langhorst Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut, Germany*. For the first time, up to 160 Gbaud 16-QAM and 8-PSK transmission over graded-index multimode fiber is demonstrated using optical time division multiplexing and demultiplexing in combination with coherent detection.