ESLW 2010

European Semiconductor Laser Workshop 2010
Friday 24 September and Saturday 25 September 2010
University of Pavia, Italy

Friday, September 24th, 2010

8:00 *Registration opens*
9:00 Welcome address

Diluted nitrides and quantum-confined materials

Chair: W. Elsaesser
Technische Universität Darmstadt, Germany

9:15 **Tailoring broadband gain in dilute nitride materials**
J. M. Rorison, X. Sun, N. Vogiatzis
University of Bristol, U.K.

9:30 **InGaAs/GaAsSb/InP Terahertz quantum cascade lasers**
C. Deutsch, A. Benz, H. Detz, M. Nobile, A. M. Andrews, P. Klang, W. Schrenk, G. Strasser, K. Unterrainer
University of Vienna, Austria

9:45 **Kinetics of charge carrier transfer between zero-dimensional nanoscale systems**
M. Menšík, K. Král
Institue of Macromolecular Chemistry ASCR, Czech Republic
Institute of Physics, ASCR, Czech Republic

Plenary Talk

10:00 **Semiconductor lasers - the first decade**
Efim L. Portnoi
Ioffe Institute, Russia

11:00 *Coffee Break*

Mode-locking

Chair: M. Benedetti
Università di Pavia, Italy

11:30 **Passive mode-locking in quantum-well lasers**
J. Javaloyes, P. Stolarz, L. Hou, M. Sorel, A.C. Bryce, S. Balle
University of Glasgow, U.K.
Institut Mediterrani d'Estudis Avançats, Spain

11:45 **320 GHz optical pulse-stream from quantum-dash mode-locked semiconductor laser diodes**
R. Maldonado-Basilio, S. Latkowski, P. Landais
Dublin City University, Ireland

12:00 **Investigation of hybrid mode-locking in a 3.1 Ghz InAs/InP(100) quantum-dot mode-locked laser diode**
S. Tahvili, L. Du, M.J.R. Heck , R. Nötzel, M.K. Smit, E.A.J.M. Bente
Technical University of Eindhoven, The Netherlands

12:15 **Simulation and design of high power gain guided quantum-dot tapered lasers operating in passive mode-locking regime**
M. Rossetti, P. Bardella, I. Montrosset
Politecnico di Torino, Italy

12:30 **160 GHz subpicosecond mode-locked quantum-dot laser pulses**
D. Arsenijević, H. Schmeckebier, G. Fiol, C. Meuer, D. Bimberg
Technische Universität Berlin, Germany

12:45 **Sonogram characterization of semiconductor mode-locked lasers with chirped Bragg grating reflectors**
P.Stolarz, M. J. Strain, M. Sorel
University of Glasgow, U.K.

13:00 **Theoretical investigations of the pulse broadening in mode-locked quantum-dot semiconductor lasers**
M. Radziunas
Weierstrass Institute for Applied Analysis and Stochastics, Germany

13:15 *Lunch*

Semiconductor optical amplifiers

Chair: J. Rorison
University of Bristol, U.K.

14:30 **A programmable all-optical look-up table based on SOAs**
A. Villafranca, M. Cabezón, D. Izquierdo, J. Pozo, I. Garcés
University of Zaragoza, Spain
Technical University of Eindhoven, The Netherlands

14:45 **Semiconductor optical amplifiers for enabling ultra-fast digital photonic processing**
G. Serafino, M. Scaffardi, L. Potì, A. Bogoni
Scuola Superiore Sant'Anna, Italy
CNIT, Italy

Plenary Talk

15:00 **Mastering power and efficiency of mid-infrared semiconductor lasers**
Manijeh Razeghi
Northwestern University, U.S.A.

16:00 *Coffee Break*

DFB and ring lasers

Chair: M. Radziunas
Weierstrass Institute for Applied Analysis and Stochastics, Germany

16:30 **High efficiency 1.5 µm DFB laser for uncooled 10 GHz bandwidth analog transmission**
G. de Valicourt, A. Nkansah, D. Wake, N. Gomes, M. Faugeron, R. Brenot, C. Ware, F. Van Dijk
Télécom ParisTech, France
University of Kent, U.K.
Thales Air Systems, France
Alcatel-Thales III-V labs, France

16:45 **DFB laser diodes fabricated using soft UV-nanoimprint lithography**
J. Viheriälä, J. Telkkälä, K. Haring, A. Laakso, T. Leinonen, R. Koskinen, K. Leinonen, M. Dumitrescu, M. Guina
Tampere University of Technology, Finland
University of Eastern Finland, Finland

17:00 **Post-growth fabrication of a DFB laser array with high side mode suppression ratio for DWDM applications**
M.Zanola, M. J. Strain, M. Sorel, G. Giuliani
Università di Pavia, Italy
University of Glasgow, U.K.

17:15 **Uncooled tuneable lasers for passive optical network applications**
A. Wonfor, S. H. Lee, R. V. Penty, I. H. White, G. Busico, R. Cush, M. Wale
University of Cambridge, U.K.
Oclaro, U.K.

17:30 **Optimised cavity geometries for high output power micro-ring lasers**
G. Mezosi, M. J. Strain, M. Sorel
University of Glasgow, U.K.

17:45 **All-optical digital signal processing based on Semiconductor Ring Lasers**
A. Trita, G. Mezosi, M. Sorel, G. Giuliani
Università di Pavia, Italy
University of Glasgow, U.K.

18:00 **Excitability in symmetry-broken semiconductor ring lasers: optical triggering of pulses**
W. Coomans, L. Gelens, S. Beri, G. Van der Sande, J. Danckaert
Vrije Universiteit Brussel, Belgium

19:30 *Workshop Dinner – Location TBD*

Saturday, September 25th, 2010

8:00 *Registration opens*

Quantum-dots

Chair: E. Bente
Technical University of Eindhoven, The Netherlands

9:00 **Diode characteristics of InAs/GaAs quantum-dot lasers**
R. Murray, P. Spencer, E. Clarke, Jie Shi, K. Groom, R. Alexander, R.A Hogg
Imperial College London, U.K.
University of Sheffield, U.K.

9:15 **Theoretical investigation of quantum-dot semiconductor optical amplifiers dynamic for different pulse lengths, influence of subpicoseconds carrier transitions rates**
D. Puris, K. Petermann
Technische Universität Berlin, Germany

9:30 **Time domain travelling wave model for the analysis and design of quantum-dot DFB lasers**
M. Gioannini, M. Rossetti, I. Montrosset
Politecnico di Torino, Italy

9:45 **Quantum-dot semiconductor optical amplifier for all optical communication networks at 1.3 μm**
H. Schmeckebier, C. Meuer, D. Bimberg
Technische Universität Berlin, Germany

Pleanary Talk

10:00 **50 years of lasers - 35 years with the laser**
Jens Buus
Gayton Photonics Ltd., U.K.

11:00 *Coffee Break*

Nano/micro cavities and chaos

Chair: M. J. Strain
University of Glasgow, U.K.

11:30 **Multisection integrated modules for chaos applications**
M. Benedetti, V. Annovazzi-Lodi, G. Aromataris, S. Merlo, V. Vercesi, M. Hamacher
Università di Pavia, Italy
Fraunhofer Institute fot Telecommunications, Germany

11:45 **Dilute nitride semiconductor disk lasers for generating multi-watt yellow-orange radiation**
V.M. Korpijärvi, J. Puustinen, T. Leinonen, A. Härkönen, and M.Guina
Tampere University of Technology, Finland

12:00 **Optimization of far-field coupling and quality factor in planar photonic crystal nanocavities**
S. L. Portalupi, M. Galli, C. Reardon, T. F. Krauss, L. O'Faolain, L. Claudio Andreani, D. Gerace
Università di Pavia, Italy
University of St. Andrews, U.K.

12:15 **VCSELs monolithically integrated with photodiodes: good for bidirectional data transmission over multimode fiber?**
R. Michalzik, A. Kern, M. Stach, W. Schwarz, M. Tanvir Haidar, R. Räosch, F. Rinaldi, D. Wahl
Ulm University, Germany

12:30 **Chaos communications using integrated sources with multiple optical feedback**
V. Vercesi, M. Benedetti, V.Annovazzi-Lodi, V.Z. Tronciu, M. Hamacher
Università di Pavia, Italy
Weierstrass Institute for Applied Analysis and Stochastic Mohrenstr, Germany
Fraunhofer Institute fot Telecommunications, Germany

12:45 **Investigations on wave chaos phenomena in polarization-stabilized VCSELs**
A. Molitor, W. Elsaesser
Technische Universität Darmstadt, Germany

13:00 **Continuous-wave harmonic generation in far-field coupled silicon photonic crystal nanocavities**
M. Galli, D. Gerace, K. Welna, C. Reardon, T. F. Krauss, L. O'Faolain, G. Guizzetti, L. C. Andreani
Università di Pavia, Italy
University of St. Andrews, U.K.

13:15 *Lunch*

14:45 *Trip to **Certosa di Pavia***