Contents

Plenary Opening Session
Chairman: M.K. Smit
Delft University of Technology, The Netherlands
Optical Communication - Today and Tomorrow (Invited)
T. Ikegami, Nippon Telegraph and Telephone Corp., Japan 25
Prospects for Integrated Optics in Telecom Applications (Invited)
M. Erman, Alcatel Alsthom Recherche, France 27
Prospects for Integrated Optics in Sensors and Microsystems (Invited)
O. Parriaux, CSEM Swiss Center for Electronics and Microtechnology, Switzerland 33

Semiconductor Lasers
Chairman: A.M.J. Koonen
AT&T Network Systems, The Netherlands
Integration Technology for Tunable Lasers (Invited)
S. Illek, B. Borchert, Siemens Corporate Research and Development, Germany 39
Integrated Optical Amplifiers (Invited)
Ultra-Short Pulse Generation at 1.3 μm by an Integrated Colliding Pulse Mode-locked Laser using All Bulk Material
Mode-Locking in Semiconductor Ring Lasers with Two Saturable Absorbers
T.F. Krauss, J. Martins-Filho, C.N. Ironside, P.J.R. Laybourn, R.M. De La Rue, University of Glasgow, Scotland 55
Monolithic Extended Cavity GaAs/AlGaAs Lasers Fabricated using Impurity-Free Vacancy Diffusion
P. Cusumano, S.G. Ayling, J.H. Marsh, University of Glasgow, Scotland 59
GaAs/AlGaAs Laser Diodes Fabricated using Wet Thermal Oxidation of AlGaAs
O.J. Homan, J.E. Epler, H.W. Lehmann, Paul Scherrer Institut, Switzerland 63

Polymer Devices
Chairman: G. Arvidsson
Institutet for Optisk Forskning, Sweden
Prospects for Integrated Optical Polymer Components (Invited)
W.H.G. Horsthuys, R. Lytel, Akzo Nobel Electronic Products, The Netherlands 67
Optical Intensity Modulation in Diazoo-Dye-Substituted Polymer Channel Waveguides
Y. Shuto, S. Tomaru, M. Hikita, M. Amano, NTT Opto-Electronics Laboratories, Japan 73
Injection Moulded 2x8 Couplers for Optical Communications
S. Kalveram, M. Größ, A. Neyer, Universität Dortmund, Germany 77
Integrated Optical Polarizers in PMMA by UV Irradiation
F. Pozzi, C. De Bernardi, CSELT, Italy, S. Morasca, Pirelli Cavi, Italy, A. Schösser, T. Tschudi, Institut für Angewandte Physik, Germany, W.F.X. Frank, Deutsche Bundespost Telekom, Germany 81
Polarization Insensitive Phase Modulator Based on Polymers for Hybrid Integration
T. Gase, A. Bräuer, W. Karthe, Fraunhofer-Institution for Applied Optics and Precision Engineering, Germany 85
Second Harmonic Generation in Organic Cerenkov-Type and Modematching Devices
O.F.J. Noordman, K. Wörhoff, N.F. van Hulst, University of Twente, The Netherlands

Optoelectronic Integration
Chairman: H. Venghaus
Heinrich Hertz Institute, Germany
Photonic Integration on InP (Invited)
D. Trommer, Heinrich-Hertz-Institut für Nachrichtentechnik
Applications of Quantum Wells in Integrated Optics (Invited)
J.H. Marsh, University of Glasgow, UK

Monolithically Integrated Active/Passive Cavity Mode Locked MQW Lasers Realized by Selective Area Growth

III-V Based Integrated Optical Chip for Metrology: Device and Integration Technology
D. Hofstetter, H.P. Zappe, P. Riel, J.E. Epler, O.J. Homan, Paul Scherrer Institut, Switzerland

Microstructure for Waveguide to Photodiode Coupling in Silicon Optoelectronics
G. Voirin, P. Sixt, E. Fullin, CSEM Centre Suisse d’Electronique et de Microtechnique, Switzerland

Measurement and Characterization
Chairman: C. De Bernardi
CSELT, Italy
Optical Mode Propagation Along Tapered Amplifiers by Scanning Microscopy with Dielectric Local Probes
R. Cella, B. Mersali, H. Brückner, A. Bruno, S. Davy, C. Licoppe, France Telecom CNET, France
Measurement of the Well and Facet Temperatures of Normally Operating Quantum Well Lasers by Analysis of the Spontaneous Emission from the Facets
A.R. Adams, E. Cariou, University of Surrey, UK, P. Vicente, B. Couzinet, A. Raymond, Université Montpellier II, France

Optical Imaging of Multimode Interference Patterns with a Resolution Below the Diffraction Limit
C. van Dam, J.W.M. van Uffelen, M.K. Smit, Delft University of Technology, The Netherlands, G.N. van den Hoven, A. Polman, FOM-institute for Atomic and Molecular Physics, The Netherlands
Principles of Modelling OLCR Signatures of Photonic Devices
J. Čtyroký, Institute of Radio Engineering and Electronics, Czech Republic
Nondestructive Method for Testing the Shift Between the Gratings in the Waveguide with Two Corrugated Boundaries
N.M. Lyndin, V.A. Sychugov, B.A. Usieovich, General Physics Institute, Russia

Poster Presentations
Passband Engineering of Acousto-Optic Tunable Filters
R.S. Chakravarthy, D.A. Smith, Case Western Reserve University, USA, A. d’ Alessandro, Università degli Studi “La Sapienza”, Italy, J.E. Baran, J.L. Jackel, Belcore, USA
Coupled Longitudinal Mode Model for Mode Locked Er:LiNbO₃ Waveguide Lasers
D. Scarano, I. Montrosset, Politecnico di Torino, Italy
Porous Silicon Fabrication for Microchip Integration
J. Müller, U. Hilleringmann, K. Gose, Dortmund University, Germany
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Micro-Opto-Mechanical Switch in Integrated Optics on Silicon</td>
<td>E. Ollier, P. Labeye, F. Revol, LETI, France</td>
<td>149</td>
</tr>
<tr>
<td>Generation of Huge Tunable Dispersion by Resonant Coupling of Fast and Slow Modes</td>
<td>U. Peschel, T. Peschel, F. Lederer, Friedrich-Schiller-Universität Jena, Germany</td>
<td>161</td>
</tr>
<tr>
<td>High-Index Zn:LiTaO₃ Optical Waveguides Prepared by Nonisovalent-Ion Exchange: The Crystal Structure and Optical Properties</td>
<td>V.A. Fedorov, Yu.N. Korkishko, Moscow Institute of Electronic Technology, Russia</td>
<td>165</td>
</tr>
<tr>
<td>Directional Coupler Sensor using a Low-Index Fluoropolymer Isolation Layer</td>
<td>B.J. Luff, R.D. Harris, J.S. Wilkinson, University of Southampton, UK</td>
<td>169</td>
</tr>
<tr>
<td>Wavelength Selective Devices based on the Arrow Scheme</td>
<td>U. Trutschel, V. Delisle, M.A. Duguay, Université Laval, Canada, F. Lederer, Friedrich Schiller Universität Jena, Germany</td>
<td>173</td>
</tr>
<tr>
<td>A Linear Waveguide Optical Modulator in the Modulation Range Above 50%</td>
<td>N.M. Lyndin, V.A. Sychugov, B.A. Usievich, General Physics Institute, Russia</td>
<td>177</td>
</tr>
<tr>
<td>Set of Normalized Scaling Charts for the Optimization of Evansance Waveguide Sensors</td>
<td>O. Parriaux, P. Sixt, CSEM Swiss Center for Electronics and Microtechnology, Switzerland</td>
<td>181</td>
</tr>
<tr>
<td>Analysis of Multilayered and Multisectioned Circular Structures using the Vector-MoL-BPM in Cylindrical Coordinates</td>
<td>E. Ahlers, R. Pregla, FernUniversität Hagen, Germany</td>
<td>185</td>
</tr>
<tr>
<td>Simple Polymer Technologies for Multimode Integrated Optics</td>
<td>D. Fischer, D. Ullmann, L. Müller, E. Voges, Universität Dortmund, Germany</td>
<td>197</td>
</tr>
<tr>
<td>Low Temperature Fabrication of GeO₂-doped Silica Optical Waveguides using Microwave Plasma</td>
<td>H. Moisan, M. Moisan, D. Pavy, F. Le Damany, K. Mehadjii, France Telecom CNET, France</td>
<td>201</td>
</tr>
</tbody>
</table>
Optical Switches and Modulators I
Chairman: A. Careno
France Telecom-CNET, France

Theoretical Investigation of Electro-Optical Switches with Very Low Crosstalk
H.-P. Nolting, M. Gravert, Heinrich-Hertz Institut, Germany

Integrated Mach-Zehnder InGaAsP BRAGWET Modulators

Diffraction of Optical Guided Waves by Magnetostatic Waves in Inclined Magnetic Field
O.V. Kolokoltev, Y.A. Gaidai, V.I. Zaets, Kiev University, Ukraine

Integrated Mach-Zehnder InGaAsP BRAQWET Modulators

Rare Earth-Doped Devices I
Chairman: D. Ostrowsky
Nice University, France

Optical Gain in Erbium-Implanted Al2O3 Waveguides
G.N. van den Hoven, E. Snoeks, A. Polman, FOM-Institute for Atomic and Molecular Physics, The Netherlands, C. van Dam, J.W.M. van Uffelen, M.K. Smit, Delft University of Technology, The Netherlands

Anomalously High Uniform Upconversion in an Erbium-Doped Waveguide Amplifier
M. Hempstead, J.E. Roman, C.C. Ye, J.S. Wilkinson, University of Southampton, UK, P. Camy, P. Laborde, C. Lerminiaux, Corning France, France

Optical Amplification in Cr Diffusion-Doped LiNbO3
J.M. Almeida, A.P. Leite, Universidade do Porto, Portugal, R.M. De La Rue, C.N. Ironside, University of Glasgow, Scotland, F. Caccavale, P. Mazzoldi, Università Degli Studi Di Padova, Italy

Amplification in Erbium Doped Microguides Realised in Phosphate Glass
D. Barbier, P. Gastaldo, J.M. Jouanno, A. Kévorkian, Groupement d’Electromagnétisme Expérimental et d’Optoélectronique, Grenoble, France, B. Hyde, Alp optics, France

Plenary Session
Chairman: N.J. Parsons
GEC-Marconi, UK

Integrated Optic Devices/Circuits for WDM Systems (Invited)
R.C. Alferness, AT&T Bell Laboratories, USA

Possibilities of Integrated Optics in Optical Storage (Invited)
H. Nishihara, Osaka University, Japan

Integrated Optics in the Race Program (Invited)
J. Buus, Gayton Photonics Ltd., United Kingdom

Integrated Optics Research in the Former Soviet Union (Invited)
V.B. Volkonsky, S.I. Vavilov State Optical Institute, Russia
WDM Devices I
Chairman: M.B.J. Diemeer
Akzo Nobel Electronic Products, The Netherlands

Integrated Optics All Optical Wavelength Converters (Invited)

Integrated-Optic Arrayed-Waveguide Grating Multiplexers with Loop-back Optical Paths
Y. Tachikawa, M. Ishii, Y. Inoue, T. Nozawa, NTT Opto-electronics Laboratories, Japan

4-Channel Wavelength Flattened Demultiplexer Integrated with Photodetectors

Novel InP-Based Phased-Array Wavelength Demultiplexer using a Generalized MMI-MZI Configuration
C. van Dam, M.R. Amersfoort, G.M. ten Kate, F.P.G.M. van Ham, M.K. Smit, Delft University of Technology, The Netherlands, P.A. Besse, M. Bachmann, H. Melchior, Swiss Federal Institute of Technology Zürich, Switzerland

Polarization Independent InP Grating Spectrograph for Fiber Optical Links
E. Gini, H. Melchior, Swiss Federal Institute of Technology Zürich, Switzerland

Waveguide Technology
Chairman: M. Armenise
Bari University, Italy

Strained InP/InGaAs Quantum Well Layers for Wavelength Demultiplexers

Variation of Passive Waveguide Birefringence with Axial Strain
H. Bissessur, P. Pagnod, B. Martin, G. Ripoche, F. Gaborit, Alcatel-Alsthom Recherche, France

Oxidized Porous Silicon Based Waveguide for Optical Interconnections
V.P. Bondarenko, A.M. Dorofeev, N.M. Kazuchits, Belarusian State University of Informatics & Radioelectronics, Republic Belarus

Antiresonant Reflecting Optical Waveguides in KTiOPO_4
J. Gehler, A. Bräuer, Ch. Wächter, W. Karthe, Fraunhofer Institut for Applied Optics and Precision Engineering, Germany, M. Rotschalk, A. Rasch, Friedrich-Schiller-University Jena, Germany

Low Temperature, Nitrogen Doped Silica Waveguides on Silicon with Small Core Dimensions Fabricated by PECVD/RIE
M. Hoffmann, E. Voges, Universität Dortmund, Germany

Refractive Index Relaxation in PECVD- and LPCVD-SiON-Waveguides on Silicon Substrates
J. Müller, U.-P. Dahms, M. Mahnke, S. Wunderlich, Technical University Hamburg-Harburg, Germany
Passive Components
Chairman: E. Voges

Dortmund University, Germany
Solition Switching in a Mach-Zehnder Device via Cascading of Second-Order Nonlinearities
A. Laureti-Palma, S. Trillo, Fondazione Ugo Bordoni, Italy, G. Assanto, Terza University of Rome, Italy ........................................... 355

Poster Presentations

Fluorescence Lifetime Optimisation of a Low Threshold, High Efficiency, Proton Exchanged Waveguide Laser in Nd:LiTaO$_3$
S. Nouh, P. Baldi, K. El Hadi, M.P. De Micheli, G. Monnom, D.B. Ostrowsky, Université de Nice-Sophia Antipolis, France, E. Lallier, M. Papuchon, Thomson-CSF/LCR, France ........................................... 359

Control of Proton Exchange for LiTaO$_3$ Waveguides and Crystal Structure of H$_x$Li$_{1-x}$TaO$_3$
K. El Hadi, P. Baldi, S. Nouh, M.P. De Micheli, A. Leycuras, Université de Nice-Sophia Antipolis, V.A. Fedorov, Yu.N. Korkishko, Moscow Institute of Electronic Technology, Russia ........................................... 363

Analysis of Nonlinear Waveguides in the Time Domain
D. Schultz, M. Pohl, E. Voges, Universität Dortmund, Germany ........................................... 367

SiO$_2$-TiO$_2$ Rib Waveguides for Electrostatically Actuated IO Nanomechanical Devices
R. Dangel, W. Lukosz, Swiss Federal Institute of Technology Zürich, Switzerland ........................................... 371

Experimental and Theoretical Study of the Switching Response of Semiconductor Optical Amplifiers
H. Soto Ortiz, D. Erasme, École Nationale Supérieure des Télécommunications, France, P. Doussiere, Alcatel Alsthom Recherche, France ........................................... 375

Development of an Integrated Optical Current Sensor for Large AC Current Sensing
V. Minier, A. Danel, D. Persegol, A. Kévorkian, Groupement d'Electromagnétisme Expérimental et d'Optoélectronique, Grenoble, France ........................................... 379

Integrated-Optical Blue Light Displacement Sensor in KTiOPO$_4$
J.-P. Ruske, M. Rottschalk, B. Unterschütz, Friedrich-Schiller-University Jena, Germany ........................................... 383

MMP Analysis of Very Short Doubly Perturbed Waveguide Structures
D. Erni, Swiss Federal Institute of Technology Zürich, Switzerland ........................................... 387

Design of Achromatic Lenses for Integrated Optics
M.A. Forastiere, G.C. Righini, IROE-CNR, Italy ........................................... 391

Reverse Exchange in the Annealed Proton Exchanged LiNbO$_3$ Structures for Buried Waveguides
Yu.N. Korkishko, V.A. Fedorov, S.V. Katin, A.V. Kondrat’ev, Moscow Institute of Electronic Technology, Russia ........................................... 395

Mode Expansion Simulation of Vertical Tapers in InP: Comparison with Experimental Results and Optimisation
J. Haes, I. Moerman, P. Demeester, R. Baets, University of Gent, Belgium ........................................... 399

Thermo-optical Digital Switches on Silicon
M. Hoffmann, E. Voges, Universität Dortmund, Germany ........................................... 403

Simulation of Semiconductor Optical Amplifiers
S. Mottet, T. Mercier, France Telecom CNET, France, J.L. Pleumeekers, Delft University of Technology, The Netherlands ........................................... 407

High-Concentration Erbium-Doped Silica-on-Silicon Grown by Plasma-Enhanced CVD
B. Pedersen, R. Kromann, NKT Research Center, Denmark, T. Feuchter, M.R. Poulsen, J.E. Pedersen, M. Kristensen, Technical University of Denmark, Denmark ........................................... 411
**Arrow Directional Coupler with Optically Induced Grating**
E. Weinert-Raczka, Technical University of Szczecin, Poland, W. Biehlig, F. Lederer, Friedrich-Schiller-University, Germany

**Waveguide Grating Coupling under Normal Incidence: a Clarification**
V.A. Sychugov, A.V. Tishchenko, General Physics Institute, Russia, O. Parriaux, CSEM Swiss Center for Electronics and Microtechnology, Switzerland

**Experimental Characterization of Magnetooptic Waveguides for Integrated Optical Applications**
A. Erdmann, M. Wallenhorst, H. Dötsch, Universität Osnabrück, Germany, H.J. Tessmann, Deutsche Telekom, Germany

**Second Harmonic Generation in a Resonantly Absorbing Medium**
I.V. Mel’nikov, General Physics Institute, Russian Federation, P.G. Kazansky, P.St.J. Russell, University of Southampton, UK

**Design and Performance Evaluation of Multi-Mode Interference Power Splitters for Optical Communications**
T. Rasmussen, J. Hedegaard Povlsen, Technical University of Denmark, Denmark

**Analytically Optimized Aplanatic Homogeneous Waveguide Lenses in Glass and LiNbO3**

**Sensors and Microsystems**
Chairman: S. Valette

1. **LETI, France**
   - **IO Biochemical Sensors** (Invited)
     Ch. Fattinger, Hoffmann La Roche, Switzerland
   - **A High-Precision, Compact, Hybrid Optical Evanescent Wave Sensor for Chemical and Biological Applications**
     H. Helmers, P. Gréco, G. Bouvier, P. Benech, Institut National Polytechnique de Grenoble, France, R. Rustad, Norwegian Institute of Technology, Norway, R. Kherrat, Ecole Centrale Lyon, France
   - **Waveguide Surface Plasmon Resonance Biosensor for the Aqueous Environment**
     R.D. Harris, B.J. Luff, J.S. Wilkinson, University of Southampton, UK, R. Wilson, D.J. Schiffrin, University of Liverpool, UK
   - **Low Cost Polymer-Optical Ammonia Sensor**
     R. Wiesmann, L. Müller, R. Klein, A. Neyer, Universität Dortmund, Germany

**Modelling and Design Methods**
Chairman: J. Čtyroký

1. **IREE, Czech Republic**
   - **Modelling Methods for Integrated Optics** (Invited)
     C.G. Someda, A.D. Capobianco, Università di Padova, Italy, P. Bassi, Università di Bologna
   - **CAD-Tool for Integrated Optics**
   - **Accelerated Algorithm for Vectorial Beam Propagation**
     D. Li, H. van Brug, H.J. Frankena, Delft University of Technology, the Netherlands
   - **Modal Analysis of Circularly Curved Ridge Waveguides; A Full-Vectorial Source-Type Integral Equation Approach**
     H.J.M. Bastiaansen, PTT Research, The Netherlands, H. Blok, Delft University of Technology, The Netherlands
Applications of Integrated Optics
Chairman: B.H. Verbeek
Philips Optoelectronics Centre, The Netherlands

Technology and Applications of Commercial LiNbO$_3$ Integrated Optic Devices (Invited)
F.J. Leonberger, S.W. Merrit, United Technologies Photonics, Inc., USA

System Requirements and Opportunities for Lossless Integrated Active Splitters

Environmental Reliability of Polymer Waveguide Devices
A. Rogner, H. Panhoff, microParts, Germany

Fully Packaged, Integrated Optical, Acoustically Tunable Add-Drop-Multiplexers in LiNbO$_3$
F. Wehrmann, Ch. Harizi, H. Hermann, U. Rust, W. Sohler, S. Westenhöfer, Universität-GH-Paderborn, Germany

Microspectrometersystem Based on Integrated Optic Components in Polymers as Spectral Detection System for the VIS- and NIR Range
C. Müller, O. Fromhein, J. Göttert, T. Kühner, J. Mohr, Forschungszentrum Karlsruhe, Germany

Low Voltage, Polarization-Independent LiNbO$_3$ Modulators
E.J. Murphy, T.O. Murphy, R.W. Irvin, AT&T Bell Laboratories, USA

WDM Devices II
Chairman: R.C. Alferness
AT&T Bell Laboratories, USA

WDM Devices in InP/InGaAsP (Invited)
M.R. Amersfoort, Bellcore, USA, M.K. Smit, Delft University of Technology, The Netherlands

Optical Phased Array in SiO$_2$/Si with Adaptable Center Wavelength
P.C. Clemens, G. Heise, R. März, H. Michel, A. Reichelt, H.W. Schneider, Siemens AG Research Laboratories, Germany

Passband Collisions and Multi-Channel Crosstalk in Acousto-Optic Filters and Switches
D.A. Smith, R.S. Chakravarthy, L. Troilo, Case Western Reserve University, USA, A. d’Alessandro, Università degli Studi “La Sapienza”, Italy

Asymmetric Y-junction Wavelength Demultiplexer in Ti:LiNbO$_3$, Using a Segmented Waveguide Branch
Z. Weissman, D. Nir, D. Brooks, S. Ruschin, A. Hardy, Tel-Aviv University, Israel

Flattened Response Ensures Polarization Independence of InGaAsP/InP Phased Array Wavelength Demultiplexer

Bandwith Optimization of Add/Drop Filters Using a Cascaded Coupler Mach-Zehnder Configuration
C. Kostrzewa, K. Petermann, Technische Universität Berlin, Germany
Optical Switches and Modulators II
Chairman: F.J. Leonberger

United Technologies Photonics, USA 525

Advanced Optical Switching Devices (Invited)
J.E. Zucker, AT&T Bell Laboratories, USA 525

Selective Area Growth of Q/Q-MQW Structures for Active/Passive 2x2 Space Switch Matrices

1:8 Optical Matrix Switch on InP/InGaAsP with Integrated Mode Transformers
L. Stoll, J. Eichinger, J. Müller, R. Müller-Nawrath, M. Schienle, B. Acklin, G. Müller, Siemens, Germany 531

Photonic Bandgap and Active Grating Devices
Chairman: R. Baets

Gent University, Belgium 543

From Microcavities to Photonic Bandgaps (Invited)
R. Stanley, M. Illegems, Ecole Polytechnique Federale Lausanne, Switzerland 543

Optical Filters from Photonic Band Gap Air-bridges
J.C. Chen, H.A. Haus, S. Fan, J.D. Joannopoulos, Massachusetts Institute of Technology, USA 549

Circular Grating Surface-Emitting Lasers with Combined First and Second Order Gratings
N. Eriksson, K.-J. Killius, M. Hagberg, A. Larsson, Chalmers University of Technology, Sweden 553

DFB Laser Arrays Realized in One Holographic Exposure
A. Talneau, J.P. Chandouineau, J. Charil, A. Ougazzaden, France Telecom CNET, France 557

A Surface Grating Distributed Feedback GaAs/AlGaAs Laser with Variable Width Waveguide for Single Mode Operation
H. Abe, S.G. Aylesing, J.H. Marsh, R.M. De La Rue, Glasgow University, Scotland 561

Rare Earth-Doped Devices II
Chairman: W. Sohler

Paderborn University, Germany 565

Erbium-Doped Integrated Lasers and Amplifiers (Invited)
H. Suche, University of Paderborn, Germany 565

Integrated DBR Laser in Erbium-Diffusion-Doped LiNbO₃
R. Groß, I. Baumann, W. Sohler, Universität-GH-Paderborn, Germany, J. Söchtig, H. Schütz, R. Widmer, Paul-Scherrer-Institut, Switzerland 571

Multiple Function Waveguide Laser in Nd-Diffused Ti:LiNbO₃
J. Amin, W.H. Loh, M. Hempstead, J.S. Wilkinson, University of Southampton, UK 575
Distributed Feedback Lasers in Rare Earth-Doped Phosphate Glass
D.L. Veasey, K.J. Malone, J.A. Aust, N.A. Sanford, A. Roshko, National Institute of Standards and Technology, USA

Hybridization and Packaging Technologies
Chairman: K. Großkopf
IOT, Germany

Packaging and Reliability of IO in Glass (Invited)
R. Fuest, IOT Integrated Optics, Germany

Packaging and Reliability of Active Integrated Optical Components (Invited)
A. O'Donnell, Integrated Optical Components Ltd, United Kingdom

An Optical Transceiver on a Silicon Motherboard
C. Jones, M. Nield, K. Cooper, R. Waller, J. Rush, P. Fiddyment, J. Collins, BT Laboratories, UK

Surface Normal Cascaded Planar Interconnection with Easy Alignment
S. Kakizaki, P. Horan, Hitachi Dublin Laboratory, Ireland

Author Index