THE UNIVERSITY OF
WARWICK

14th International Conference on Transparent Optical Networks
1st - 5th July, 2012
University of Warwick, Coventry, UK

co-located with:

- 11th European Symposium on Photonic Crystals (ESPC)

- 11th Workshop on All-Optical Routing (WAOR)

- 9th Global Optical & Wireless Networking Seminar (GOWN)

- 8th Reliability Issues in Next Generation Optical Networks Workshop (RONEXT)

- 8th Photonic Integrated Components & Applications Workshop (PICAW)

- 7th Nanophotonics for All-Optical Networking Workshop (NAON)

- 7th Special Session on Photonic Atoms & Molecules (PAM ⌗ former MPM)

- 7th Special Industrial Session

- 6th Special Session on Novel Glasses for photonic devices

- 5th Special Session on Market in Telecommunications (MARS)

- 4th ACCORDANCE Workshop on Broadband Access

- 3rd Workshop on Communication in Transportation Systems (CTS)

- 2nd Workshop on Green Optical Communications (GOC)

- 2nd Special Session on Intelligent Systems for Optical Networks Design (ISOND)

- 2nd Special Session on Microwave Photonics (MP)

- Sub-Wavelength Photonics Workshop (SWP)

- EU FP7 Project SOFI Special Session on Silicon Photonics Based Components

- EU FP7 Project NAVOLCHI Special Section on Plasmonics Based Components

- Optical Wireless Workshop (OWW)

- Tutorial on "Optical Interconnects for Future Data Center Networks"

- Tutorial on "Optical OFDM"

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Simulation of High-*Q* Nanocavities with 1D Photonic Gap

Jiří Petráček[1], Bjorn Maes[2], Sven Burger[3], Jaroslav Luksch[1], Pavel Kwiecien[4], Ivan Richter[4]

*[1] Institute of Physical Engineering, Brno University of Technology
Technická 2, CZ-616 69 Brno, Czech Republic*

*[2] Micro- and Nanophotonic Materials Group, University of Mons, Faculty of Science,
Avenue Maistriau 19, B-7000 Mons, Belgium*

[3] Zuse Institute Berlin (ZIB), Takustraße 7, D–14 195 Berlin, Germany

*[4] Department of Physical Electronics, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical
University in Prague, Břehová 7, 115 19 Praha 1, Czech Republic*

Tel: +420 541 142 764, Fax: +420 541 142 842, e-mail: petracek@fme.vutbr.cz

ABSTRACT

We report on theoretical investigation of a hybrid cavity structure which has been conducted within the European Action COST MP0702. The structure, which can reach ultrahigh *Q* factors, consists of a size-modulated 1D stack cavity made in a III-V material and coupled to a silicon waveguide. We present results of structure behavior simulations obtained by four independent rigorous numerical techniques. We discuss qualitative physical properties of the simulations results and identify the main physical effects contributing to the total *Q* factor.

Keywords: high-*Q* nanocavity, photonic crystals, resonant frequency, numerical modeling, bidirectional mode expansion and propagation method, finite difference time domain method, finite element method, rigorous coupled wave analysis

1. INTRODUCTION

Optical nanocavities with high-quality factors (*Q*) and small modal volumes have become useful in nanophotonics for a wide range of important applications, such as miniature sensors and filters, low-threshold lasers, and low-power optical switches. The research has been mainly concentrated on structures with 2D or 3D photonic band gaps. Recently, however, cavities in size-modulated 1D periodic structures with 1D photonic gaps were studied too; it was shown that they could reach ultrahigh values of *Q* factor while maintaining wavelength-sized dimensions [1]. These size-modulated 1D cavities exhibit simple geometry which opens new potential for wavelength-scale, high-quality cavity devices. We consequently employed this cavity structure as the basis for a practical modeling exercise, originally under the umbrella of COST MP0702 Action, with the added value of studying hybrid material device physics.

The investigated structure, which is illustrated in Fig. 1, consists of the size-modulated 1D cavity coupled to an (input or output) straight waveguide. The cavity is made in a III-V material (InP is proposed here), as such materials are effective for active components. The waveguide is considered in silicon, which has been proven as a suitable base for integrated waveguide devices.
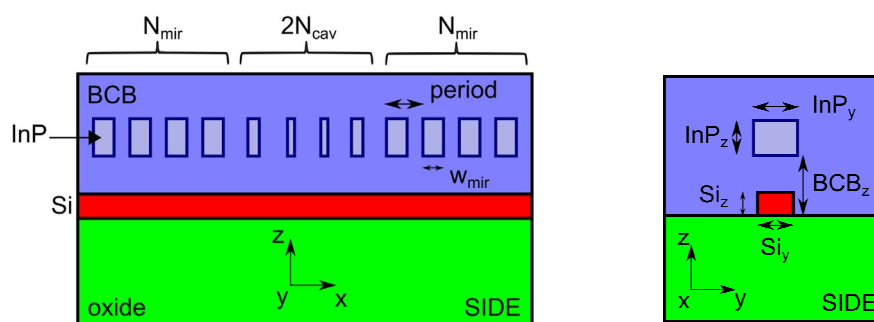

Figure 1. Geometry of the size-modulated 1D hybrid cavity coupled to the waveguide. The cavity is formed with the InP sections (veins), the Si waveguide functions as the input/output coupler. The widths of 2N_{cav} veins are modulated so that the thinnest veins are located near cavity centre.

In this work, we briefly report on simulations of this hybrid cavity structure using four independent rigorous numerical techniques. We discuss qualitative physical properties of the simulations results and identify the main physical effects contributing to the total *Q* factor. Note, however, that the proposal of the structure and the full results of the study will be published elsewhere [2].

2. NUMERICAL TECHNIQUES

Clearly, simulation of resonant 3D structures demands very efficient and reliable computational methods. In our study, we used the following approaches:

- Bidirectional eigenmode propagation (BEP) is a modal expansion scheme. The waveguide modes are searched by means of the finite-element commercially available software COMSOL Multiphysics. (Modes of homogeneous sections are calculated analytically.) The technique was effectively combined with the propagation algorithm of numerically-stable scattering matrices where the interface matrices were determined from the overlap integrals of modal fields [3]. Resonance wavelength and Q factor have been calculated from eigenvalues of the reflectivity matrix [4]. Note that this algorithm has been found to provide more reliable results than the standard approach based on locating of the maximum and bandwidth of a resonance curve.
- The finite-difference time-domain (FDTD) method, using the freely available software package MEEP [5].
- The time-harmonic, higher-order 3D finite element (FE) solver JCMsuite with adaptive meshing; it has been used to compute resonance modes and corresponding complex eigenfrequencies of the cavity directly [6]. Afterwards, from the complex eigenvalues, resonance wavelength and Q factor have been derived [7].
- Aperiodic rigorous coupled wave analysis (aRCWA); it is the Fourier expansion scheme which uses in-house robust 3D tool effectively combining both 2D mode solver (based on 2D periodic RCWA tool in a combination with the isolating boundary conditions of a PML type, in the form of either complex coordinate transforms or anisotropic layers [8,9]), with the help of both ASR technique [10] and/or the application of structural symmetries [11], and the advanced "grating-oriented" schemes of scattering matrix formalism. Resonance wavelengths and Q factors have been calculated with the same procedure as in the case of the BEP technique described above.

3. RESULTS

Referring to Fig. 1, we used the following parameters for the calculation: $InP_y = 0.7$ μm, $InP_z = 0.35$ μm, $Si_z = 0.22$ μm and $BCB_z = 1.0$ μm. Refractive indices in materials used within the structure were chosen as 3.46 (Si), 1.45 (silicon oxide), 3.17 (InP) and 1.54 (benzocyclobuten-based polymer, BCB).

Center positions of the InP sections (veins) were regularly spaced with the period $a = 0.35$ μm. The number of modulated veins on each side of the cavity center were marked as N_{cav}. Here we considered modulation of the vein widths given by the formula:

$$w(i) = (0.15\,\mu m)\left[1 + \frac{(i-1)^2}{3N_{cav}^2}\right], \quad i = 1...N_{cav} \tag{1}$$

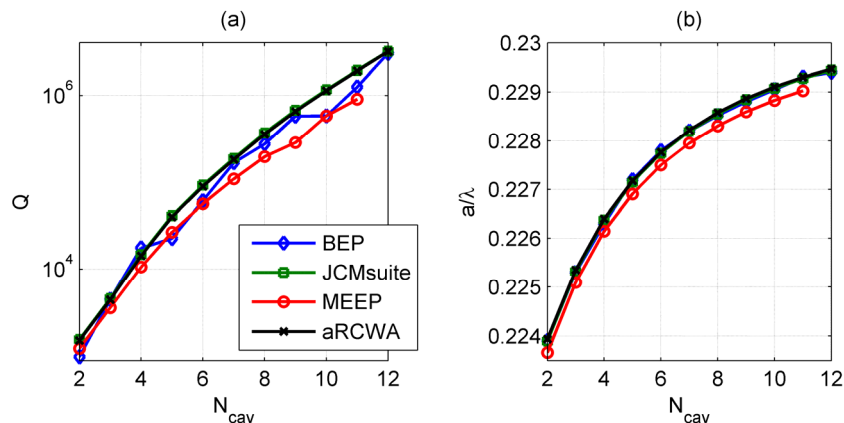Both cavity "mirrors" are formed by N_{mir} veins, $N_{mir} = 10$, with constant width $w_{mir} = 0.2$ μm.

Figure 2. Simulation results for the single cavity. (a) Quality factor Q and (b) normalized resonance frequency a/λ versus N_{cav} calculated by the four numerical techniques (BEP - blue diamonds, JCMsuite - green squares, MEEP - red circles, aRCWA – black crosses).

We first present results for a single cavity when there are no waveguide and no substrate nearby present. Figures 2 (a) and (b) show Q and the normalized resonance frequency a/λ (λ is the resonance wavelength) of the fundamental quasi-TE cavity mode (electric field parallel with y axis). Accordingly, the results and the principle of cavity operation can be explained with the help of Fig. 3 as follows [2]. Let us start first with the periodic 1D stack structure (no vein modulation) which can support Bloch modes. Indeed, position of the bandgap strongly depends on the widths of the veins. Consider, for example, operating frequency shown by horizontal blue line in Fig. 3 and allow modulation of vein widths with the aim to create the size-modulated cavity. The modulation is

chosen so that the Bloch mode is propagating in the center of the cavity (veins with width $w = 0.15$ μm) and evanescent in the mirror sections on the cavity sides ($w = w_{mir} = 0.2$ μm). Thus the mode, which was propagating in the center, can be scattered into radiation or reflected in the mirror sections. The radiation, however, can be significantly suppressed by slow change of vein thicknesses, *i.e.* when N_{cav} is increased. In this way, it is possible to achieve very high reflections, and consequently cavity modes with high Q.
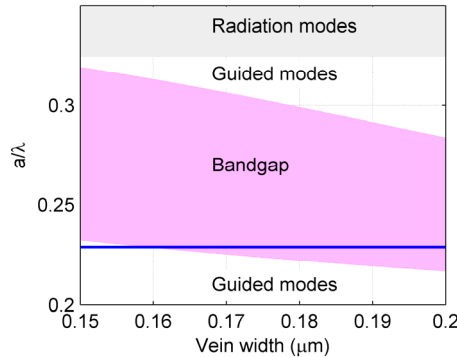

Figure 3. Gradual shift of the bandgap for the periodic 1D stack structure. The horizontal blue line indicates the resonance frequency for the size-modulated 1D cavity with $N_{cav} = 10$; the results were calculated using the BEP technique.

The radiation suppression which results in the strong increase of Q is clearly seen in Fig. 2(a). As N_{cav} increases, the rate of increase of Q lessens gradually. Thus for small N_{cav}, the structure is quite sensitive to increasing N_{cav}, leading to a rapid decline of radiation losses and increasing Q. At higher N_{cav}, a slightly slower exponential increase is seen. We observed that, in this regime, the losses mainly depend on the number of mirror veins N_{mir}, similarly as for reflections from the Bragg mirror.

As shown in Fig. 2(b), the normalized resonance frequency increases slightly as a function of N_{cav} and saturates close to the upper limit of the Bloch mode frequency in the center of the cavity. This is because there are standing waves present in the cavity at the resonance. For perfectly periodic structure (no width modulation), this is only possible at the edge of the Brillouin zone. Therefore, with increasing N_{cav} the guided Bloch mode in cavity centre approaches the edge of the Brillouin zone and consequently the frequency is limited by the band maximum.

Presence of a Si waveguide can significantly change the cavity performance. In this case coupling between the cavity and the waveguide may cause additional losses and affect the total quality factor. Therefore change in Q depends strongly on the waveguide properties. As an example, Fig. 4 shows the influence of the Si waveguide width Si_y for various constant values of N_{cav}. We observe that Q exhibits a dip around a certain value of $Si_y = 0.33$ μm. This behavior can be understood by considering coupling between the waveguide and cavity mode. To support our argument, Fig. 5 shows effective indices of these modes for $a/\lambda = 0.229$, as a function of the waveguide width Si_y; indeed the effective index of the waveguide mode varies accordingly with this width. It is seen that, at the width of $Si_y = 0.33$ μm, one obtains phase matching between the modes [2], leading to a strong coupling, just as in conventional directional couplers.
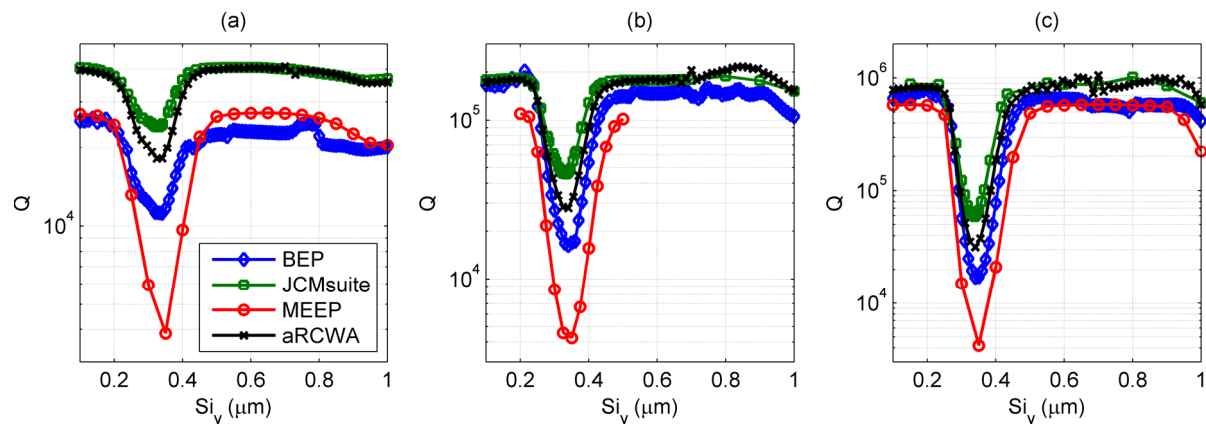
Figure 4. Simulation results calculated by the four numerical techniques for the cavity coupled to the waveguide. Quality factor Q versus Si waveguide width Si_y, for (a) $N_{cav} = 5$, (b) $N_{cav} = 7$, and (c) $N_{cav} = 10$.

Considering comparison of the four numerical methods, we observe reasonably good agreement in Fig. 2. Note, however, that deviations of the BEP results around the central smooth trend in Fig. 2(a) (and also small

oscillations seen in Fig. 4) are probably numerical artefacts caused by imperfect boundary conditions. Similarly, the effectiveness of transparent boundary conditions (represented with perfectly matched layers) can influence the results and cause small quantitative differences, such as observed in Fig. 2. For FE (JCMsuite) we have checked that PML settings are chosen such that the influence of artificial reflections is negligible.

In Fig. 4 the techniques provide good qualitative agreement. However, there are significant differences in quantitative results. This is because small errors, which are inevitable in any numerical technique, are amplified by resonant behavior of the simulated device.
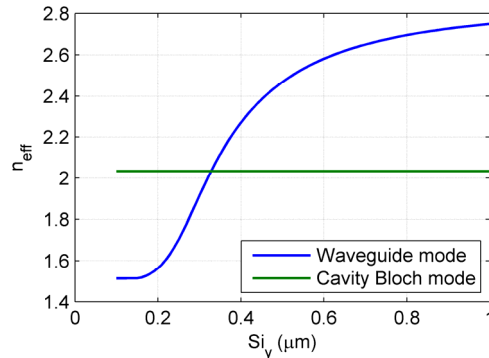

Figure 5. The phase matching between the waveguide mode and the central cavity mode. The graph shows effective indices n_{eff} of the Si waveguide mode (as a function of width Si_y) and the Bloch mode in the cavity centre. The results were calculated for $a/\lambda = 0.229$.

4. CONCLUSIONS

The four rigorous numerical techniques have been applied to the novel and promising structure, the high-Q size-modulated 1D nanocavity. The all techniques have appeared efficient in providing the important cavity characteristics, with their advantages and disadvantages. It has been shown that the coupling between the cavity and the waveguide is due to a sensitive phase-matching process, which needs to be controlled to achieve an optimum design. Quantitative differences among numerical results demonstrate that accurate computation of 3D resonators still remains a challenging problem which should be further investigated.

ACKNOWLEDGEMENTS

REFERENCES

[1]   M. Notomi, E. Kuramochi, H. Taniyama: Ultrahigh-Q nanocavity with 1D photonic gap, *Opt. Express*, vol. 16, no. 15, pp. 11059-11102, Jul. 2008.

[2]   B. Maes, *et al.*: Numerical method comparison for high-Q optical nanocavities. To be published.

[3]   P. Bienstman, R. Baets: Optical modelling of photonic crystals and VCSELs using eigenmode expansion and perfectly matched layers, *Opt. Quantum Electron.*, vol. 33, no. 4-5, pp. 327-341, Apr. 2001.

[4]   N. Gregersen, *et al.*: Numerical and experimental study of the Q factor of high-Q micropillar cavities, *IEEE J. Quantum Electron.* vol. 46, no. 10, pp. 1470-1483, Oct. 2010.

[5]   A. F. Oskooi, *et al.*: MEEP: A flexible free-software package for electromagnetic simulations by the FDTD method, *Comp. Phys. Commun.* vol. 181, no. 3, pp. 687–702, Mar. 2010.

[6]   J. Pomplun, *et al.*: Adaptive finite element method for simulation of optical nano structures, *Phys. Stat. Sol. (b),* vol. 244, no. 10, pp. 3419-3434, Oct. 2007.

[7]   S. Burger, *et al.*: Finite-element method simulations of high-Q nanocavities with 1D photonic bandgap, *Proc. SPIE*, vol. 7933, p. 79330T, Jan. 2011.

[8]   E. Silberstein, *et al.*: Use of grating theories in integrated optics, *JOSA A*, vol. 18, no. 11, pp. 2865-2875, Nov. 2001.

[9]   J.-P. Hugonin, P. Lalanne: Perfectly matched layers as nonlinear coordinate transforms: A generalized formalization, *JOSA A*, vol. 22, no. 9, pp. 1844-1849, Sep. 2001.

[10] J. Čtyroký, P. Kwiecien, I. Richter: Fourier series-based bidirectional propagation algorithm with adaptive spatial resolution, *J. Lightwave Technol.*, vol. 28, no. 20, pp. 2969-2976, Oct. 2010.

[11] Z.Y. Li, K.M. Ho: Application of structural symmetries in the plane-wave-based transfer-matrix method for three-dimensional photonic crystal waveguides, *Phys. Rev. B*, vol. 68, no. 24, pp. 245117-1-20, Dec. 2003.

ICTON 2012 Programme

Sunday, July 1

19:00	*Welcome drinks reception in the Chancellors Suite*

Monday, July 2

8:00	**Registration**

Opening Ceremony (9:30 – 9:50) Hall: Sciences L3

SESSION Mo.A (9:50 – 11:05) Hall: Sciences L3
PLENARY *Chair: Polina Bayvel*

9:50	**Mo.A.1** Clear sighted transparency (*Invited*) *P. Cochrane*
10:15	**Mo.A.2** Nonlinear and magnetooptic light control in photonic metamaterial waveguides and superfocusing (*Invited*) *A.D. Boardman, R. Mitchell-Thomas, Y. Rapoport*
10:40	**Mo.A.3** Impact of intersubband dispersive gain in semiconductor quantum optics (*Invited*) *M.F. Pereira*

Coffee break (11:05 – 11:30)

Track A (Hall: Sciences L3)	Track B (Hall: Sciences PLT)	Track C (Hall: Sciences L4)	Track D (Hall: Sciences L5)	Track E (Hall: Humanities 051)	Track F (Hall: Humanities 052)
SESSION Mo.B1 (11:30 – 13:10) **ICTON I** *Chair: Emmanouel Varvarigos*	**SESSION Mo.B2** (11:30 – 13:20) **WAOR I** *Chair: Mirosław Klinkowski*	**SESSION Mo.B3** (11:30 – 13:30) **Industrial** *Chair: Marco Forzati*	**SESSION Mo.B4** (11:30 – 13:10) **NAON I** *Chair: Liam Barry*	**SESSION Mo.B5** (11:30 – 13:25) **SWP I Plasmonics** *Chair: Rafał Kotyński*	**SESSION Mo.B6** (11:30 – 13:10) **ESPC I** *Chair: Romuald Houdré*
11:30 **Mo.B1.1** Capacity of dispersion-non-compensated nonlinear fibre channels (*Invited*) *S.K.. Turitsyn, M. Sorokina, S. Derevyanko*	11:30 **Mo.B2.1** Experimental assessment of low latency and large port count OPS for data center network interconnect (*Invited*) *N. Calabretta, Jun Luo, S. Di Lucente, H. Dorren*	11:30 **Mo.B3.1** How much of the bandwidth do we actually use? An investigation of residential access traffic load (*Invited*) *A. Aurelius, Å. Arvidsson, P. Heegard, B. Villa, M. Kihl, Yichi Zhang*	11:30 **Mo.B4.1** Recent progress in polarization bistable VCSELs (*Invited*) *H. Kawaguchi*	11:30 **Mo.B5.1** Exciton-plasmon coupling: Good or bad? (*Invited*) *A.M. Kern, Dai Zhang, A.J. Meixner*	11:30 **Mo.B6.1** Light trapping in thin film solar cells with sub-wavelength photonic crystal patterns (*Invited*) *A. Bozzola, M. Liscidini, L.C. Andreani*
11:50 **Mo.B1.2** Requirements on transmission fibre infrastructure suitable for high power amplifiers (*Invited*) *A. Ehrhardt, L. Schürer, T. Rösler, W. Krönert, D. Schnupp*	11:50 **Mo.B2.2** Optical packet switching and buffering using low polarization dependent optical switches (*Invited*) *S. Shinada, H. Furukawa, N. Wada*	11:50 **Mo.B3.2** Multi-layer network optimization: Benefits of elastic optical networks (*Invited*) *A. Klekamp*	11:50 **Mo.B4.2** InP-based 1.3 µm and 1.55 µm short-cavity VCSELs suitable for telecom- and datacom-applications (*Invited*) *M. Müller, C. Grasse, M.C. Amann*	11:50 **Mo.B5.2** Improving of plasmonic waveguides coupling efficiency using nanoantennas (*Invited*) *A. Andryieuski, R. Malureanu, A.V. Lavrinenko, J-S. Bouillard, A.V. Zayats*	11:50 **Mo.B6.2** Optical absorption enhancement in a hybrid system photonic crystal – thin substrate for photovoltaic applications (*Invited*) *J. Buencuerpo, L.E. Munioz-Camuniez, J.M. Llorens, M.L. Dotor, P.A. Postigo*
12:10 **Mo.B1.3** Optimization of extreme optical links for network upgrades (*Invited*) *N.B. Pavlović, R. Nogueira*	12:10 **Mo.B2.3** Packet compression of complex modulation formats based on coherent optical superposition (*Invited*) *F. Parmigiani, J. Kakande, L. Jones, P. Petráčekopoulos, D.J. Richardson*	12:10 **Mo.B3.3** Drop-link monitoring in passive optical networks (*Invited*) *P.J. Urban*	12:10 **Mo.B4.3** Progress on the analysis of polarised optical injection in 1550nm-VCSELs (*Invited*) *A. Hurtado, K. Schires, R. Al-Seyab, N. Khan, I.D. Henning, M.J. Adams*	12:10 **Mo.B5.3** Large energy transfer distance to a plane of gold nanoparticles (*Invited*) *Xia Zhang, V.A. Gerard, Y.K. Gun'ko, A.L. Bradley, V. Lesnyak, N. Gaponik, A.S. Susha, A.L. Rogach*	12:10 **Mo.B6.3** Polarization insensitive photonic devices; Waveguides, splitter, and sharp bends (*Invited*) *M. Turduev, I.H. Giden, H. Kurt*
12:30 **Mo.B1.4** Beyond wavelength-selective channel switches: Trends in support of flexible/elastic optical networks (*Invited*) *D.M. Marom, D. Sinefeld*	12:30 **Mo.B2.4** EDFA transient suppression in optical burst switching systems (*Invited*) *A. Kaszubowska-Anandarajah, R. Oberland, E. Bravi, R. Giller, E. Connolly, E.K. MacHale, M. Todd, G. Talli, D. McDonald, A. Surpin, O. Aharoni, U. Ghera*	12:30 **Mo.B3.4** Extending impairment-aware control plane solutions toward cognitive optical networks (*Invited*) *Y. Ye, A. Francescon, E. Salvadori, M. Angelou, I. Tomkos, I. de Miguel, R.J. Duran, J.C. Aguado*	12:30 **Mo.B4.4** AlOx/GaAs high contrast grating mirrors for mid-infrared VCSELs (*Invited*) *Y. Laaroussi, O. Gauthier-Lafaye, L. Bouscayrol, C. Fontaine, G. Almuneau, L. Cerutti, T. Taliercio, C. Chevallier, F. Genty, N. Fressengeas*	12:30 **Mo.B5.4** Tailored and tapered metallic gratings for enhanced absorption or transmission (*Invited*) *Honghui Shen, A. Abass, M. Burgelman, B. Maes*	12:30 **Mo.B6.4** Surface addressable photonic crystal resonators: General design rules and applications (*Invited*) *X. Letartre, P. Viktorovitch, C. Sciancalepore, T. Benyattou, B. Ben Bakir*
12:50 **Mo.B1.5** Quality metrics for optical signals: Eye diagram, Q-factor, OSNR, EVM and BER (*Invited*) *W. Freude, R. Schmogrow, B. Nebendahl, M. Winter, A. Josten, D. Hillerkuss, S. Koenig, J. Meyer, M. Dreschmann, M. Huebner, C. Koos, J. Becker, J. Leuthold*	12:50 **Mo.B2.5** Performance evaluation for 2R burst mode optical regenerator cascades in presence of co-channel phase uncorrelated crosstalk *P.N. Desai, A.J. Phillips, S. Sujecki*	12:50 **Mo.B3.5** ESSenTIAL: EPIXfab Services specifically targeting (SME) Industrial Takeup of Advanced silicon photonics (*Invited*) *J. Pozo, P. Kumar, D.M.R. Lo Cascio, A. Khanna, P. Dumon, D. Delbeke, R. Baets, M. Fournier, J-M. Fedeli, L. Fulbert, L. Zimmermann, B. Tillack, H. Tian, T. Aalto, P. O'Brien, D. Deptuck, J. Xu, X. Zhang, D. Gale*	12:50 **Mo.B4.5** Short pulse transmission characteristics in multi-contact SOA (*Invited*) *K. Carney, R. Watts, S. Philippe, P. Landais, R. Lennox, L. Bradley*	12:50 **Mo.B5.5** Photonic tunability in VO₂ based nano-structures (*Invited*) *M. Maaza, D. Hamidi, T. Kerdja, J.B. Kana Kana*	12:50 **Mo.B6.5** Enhanced Raman amplification by photonic crystal based waveguide structure (*Invited*) *A. Seidfaraji, V. Ahmadi*
	13:05 **Mo.B2.6** Impact of the DPSK-OCDM modulation system on optical packet switching performance *V. Eramo, M. Listanti, A. Cianfrani*	13:10 **Mo.B3.6** Brillouin fiber ring laser based in-band OSNR monitoring method for transparent optical networks (*Invited*) *D. Dahan, U. Mahlab, Y. Shachaf, Y. Ben Ezra*		13:10 **Mo.B5.6** Decay rates near layers of Au nanospheres *C.A. Marocico, A.L. Bradley*	

Lunch break (Track A: 13:10 – 15:00) | *Lunch break* (Track B: 13:20 – 15:00) | *Lunch break* (Track C: 13:30 – 15:00) | *Lunch break* (Track D: 13:10 – 15:00) | *Lunch break* (Track E: 13:25 – 15:00) | *Lunch break* (Track F: 13:10 – 15:00)

Track A	Track B	Track C	Track D	Track E	Track F
SESSION Mo.C1 (15:00 – 17:20) **ICTON II** *Chair: Paul Ghobril*	**SESSION Mo.C2** (15:00 – 16:40) **WAOR II** *Chair: Xavier Hesselbach*	**SESSION Mo.C3** (15:00 – 16:35) **GOWN I** *Chair: Carmo Medeiros*	**SESSION Mo.C4** (15:00 – 17:00) **NAON II** *Chair: Ramon Herrero*	**SESSION Mo.C5** (15:00 – 16:40) **SWP II Plasmonics** *Chair: Sonia García-Blanco*	**SESSION Mo.C6** (15:00 – 16:40) **PAM I** *Chair: Vasily Astratov*
15:00 **Mo.C1.1** A survey of recent developments on flexible/elastic optical networking (*Invited*) *I. Tomkos, E. Palkopoulou, M. Angelou*	15:00 **Mo.C2.1** PCE QoS tools and related scalability in WDM networks (*Invited*) *J. Sócrates Dantas, R. Melo Silveira, W.V. Ruggiero, D. Careglio, J. Solé-Pareta*	15:00 **Mo.C3.1** Cost and energy efficient multi-standard OFDM integrated optical access and in-building network architecture (*Invited*) *R. Llorente, M. Beltran, M. Morant, E. Pellicer*	15:00 **Mo.C4.1** Low-energy-consumption hybrid lasers for silicon photonics (*Invited*) *Il-Sug Chung, Qijiang Ran, J. Mørk*	15:00 **Mo.C5.1** Subwavelength plasmonic lasers (*Invited*) *Hong-Gyu Park, Soon-Hong Kwon, Ju-Hyung Kang*	15:00 **Mo.C6.1** Surface plasmon polaritons: Excitation and effect of loss in the quantum regime (*Invited*) *Y. Sonnefraud, S.A. Maier*
15:20 **Mo.C1.2** Role of electronics and optics in creating future transport networks (*Invited*) *Ken-ichi Sato*	15:20 **Mo.C2.2** From GMPLS to PCE/GMPLS to OpenFlow: How much benefit can we get from the technical evolution of control plane in optical networks? (*Invited*) *Lei Liu, T. Tsuritani, I. Morita*	15:20 **Mo.C3.2** A new 60 GHz photonic radio-over-fiber scheme for multiband OFDM wireless systems (*Invited*) *Wen-Piao Lin, Yu-Fang Hsu*	15:20 **Mo.C4.2** Low linewidth lasers for enabling high capacity optical communication systems (*Invited*) *T.N. Huynh, J. O'Carroll, F. Smyth, K. Shi, L Nguyen, P. Anandarajah, R. Phelan, B. Kelly, L.P. Barry*	15:20 **Mo.C5.2** Nanophotonics inside hybrid optical fibers (*Invited*) *M.A. Schmidt, H. Lee, N. Granzow, P. Uebel, P.St.J. Russell*	15:20 **Mo.C6.2** On-chip integrated optoplasmonic molecues and superlenses (*Invited*) *Wonmi Ahn, S.V. Boriskina, Yan Hong, B.M. Reinhard*

Monday (continued)

15:40 Mo.C1.3 Spectral-spatial concept of hierarchical and elastic optical networking (***Invited***) *M. Cvijetic, I.B. Djordjevic, N. Cvijetic*	**15:40 Mo.C2.3** On the performance of flexgrid-based optical networks (***Invited***) *L. Velasco, M. Ruiz, A. Castro, O. Pedrola, D. Careglio, J. Comellas, M. Klinkowski*	**15:40 Mo.C3.3** Performance analysis of an OFDM transmission system with directly modulated lasers for wireless backhauling (***Invited***) *A.K. Mishra, Z. Wang, H. Klein, R. Bonk, S. Koenig, D. Karnick, R. Schmogrow, D. Hillerkuss, M. Moehrle, T. Pfeiffer, C. Koos, J. Leuthold, W. Freude*	**15:40 Mo.C4.3** Dynamics of semiconductor lasers under fast intracavity frequency sweeping (***Invited***) *E.A. Avrutin, L.Z. Zhang*	**15:40 Mo.C5.3** Plasmonic lenses with long focal lengths (***Invited***) *T. Stefaniuk, P. Wróbel, T.J. Antosiewicz, T. Szoplik*	**15:40 Mo.C6.3** Slow and stopped-light lasing in active plasmonic metamaterials (***Invited***) *K.L. Tsakmakidis, O. Hess*
16:00 Mo.C1.4 Digital Subcarrier Optical Networks (DSONs) (***Invited***) *W. Huang, M. Razo, M. Tacca, A. Fumagalli, R. Hui*	**16:00 Mo.C2.4** Performance comparison of methods to solve the routing and spectrum allocation problem (***Invited***) *R.J. Durán, I. Rodríguez, N. Fernández, I. de Miguel, N. Merayo, P. Fernández, J.C. Aguado, T. Jiménez, R.M. Lorenzo, E.J. Abril*	**16:00 Mo.C3.4** Experimental performance analysis of MB-OFDM ultra-wideband radio-over-fiber signals in the 60-GHz band using a commercially-available DFB laser *O. Omomukuyo, M. P. Thakur, J.E. Mitchell*	**16:00 Mo.C4.4** Characteristic switching-on and passive mode-locking times in a quantum-dash Fabry-Pérot laser diode *R. Maldonado-Basilio, J. Parra-Cetina, P. Landais, S. Latkowski, N. Calabretta*	**16:00 Mo.C5.4** Optical properties of ordered plasmonic nanostructures in linear and nonlinear regimes (***Invited***) *M. Grande, F. Dioguardi, R. Marani, A. D'Orazio, T. Stomeo, M. De Vittorio, G. V. Bianco, G. Bruno, M.A. Vincenti, D. de Ceglia, M. Scalora*	**16:00 Mo.C6.4** Up close and optical: Light at the nanoscale (***Invited***) *L. Kuipers*
16:20 Mo.C1.5 Dual-time-scale simulation of dynamics and reconfiguration of fiber optical networks (***Invited***) *N. Karelin, S. Mingaleev, K.G. Kuzmin, A. Richter, I. Koltchanov, H. Louchet*	**16:20 Mo.C2.5** On the effect of regenerator placement on spectrum usage in translucent elastic optical networks (***Invited***) *M. Klinkowski*	**16:20 Mo.C3.5** Performance comparison of hybrid 1-D WDM/OCDMA and 2-D OCDMA towards future access network migration scenario *L. Galdino, T.R. Raddo, A.L. Sanches, L.H. Bonani, E. Moschim*	**16:20 Mo.C4.5** High reflectivity small aperture resonant grating filters for laser diode spectral stabilisation (***Invited***) *X. Buet, A. Monmayrant, E. Daran, D. Belharet, F. Lozes-Dupuy, O. Gauthier-Lafaye*	**16:20 Mo.C5.5** Nonlinear effects in hybrid plasmonic waveguides (***Invited***) *A. Pitilakis, O. Tsilipakos, E.E. Kriezis*	**16:20 Mo.C6.5** Enhancement effects in plasmonic nanocavities with quantum emitters (***Invited***) *D. Melnikau, A. Chuvilin, R. Hillenbrand, D. Savateeva, Y.P. Rakovich, N. Weiss, N. Gaponik*
16:40 Mo.C1.6 Nonlinear transmission performance of digital Nyquist WDM and optical OFDM (***Invited***) *P. Bayvel, S. Kilmurray, R.I. Killey*			**16:40 Mo.C4.6** Re-growth free single mode lasers based on slots suitable for photonic integration (***Invited***) *Qiaoyin Lu, Weihua Guo, A. Abdullaev, M. Nawrocka, J. O'Callaghan, M. Lynch, V. Weldon, J.F. Donegan*		
17:00 Mo.C1.7 To be announced (***Invited***) *D. Payne*					

19:00 *ffet evening event in the Rootes bar*

Tuesday, July 3

SESSION Tu.A1 (8:30 – 10:10) **ICTON III** *Chair: Ioannis Tomkos*	**SESSION Tu.A2** (8:30 – 10:05) **WAOR III** *Chair: Moshe Zukerman*	**SESSION Tu.A3** (8:30 – 10:05) **Access I** *Chair: Josep Prat*	**SESSION Tu.A4** (8:30 – 10:10) **NAON III** *Chair: Hitoshi Kawaguchi*	**SESSION Tu.A5** (8:30 – 10:25) **SWP III Plasmonics** *Chair: Bjorn Maes*	**SESSION Tu.A6** (8:30 – 10:05) **PAM II** *Chair: Misha Sumetsky*
8:30 Tu.A1.1 Optical node architectures for elastic networks: From static to architecture on demand (***Invited***) *N. Amaya, G.S. Zervas, D. Simeonidou*	**8:30 Tu.A2.1** Evaluation of IP-over-DWDM core network architectures with CD-ROADMs using IP protection in combination with optical restoration (***Invited***) *A. Autenrieth, M. Neugirg, J-P. Elbers, M. Gunkel*	**8:30 Tu.A3.1** What is left in fiber access bandwidth? (***Invited***) *A.L.J. Teixeira*	**8:30 Tu.A4.1** Optical injection influence on quantum dot-in-a-well (QDWELL) laser dynamics (***Invited***) *B.I. Lembrikov, Y. Ben-Ezra*	**8:30 Tu.A5.1** Surface waves in plasmonic anisotropic media (***Invited***) *C.J. Zapata-Rodríguez, J.J. Miret, Z. Jakšić, S. Vuković*	**8:30 Tu.A6.1** Deterministic quantum photonics with ordered systems of quantum wires and quantum dots (***Invited***) *E. Kapon*
8:50 Tu.A1.2 Rearrangement: From wavelength routed to sliced-spectrum optical networks (***Invited***) *P. Ghobril, C. Zaiter, E. Le Rouzic*	**8:50 Tu.A2.2** Path-based recovery in flexgrid optical networks (***Invited***) *A. Castro, M. Ruiz, L. Velasco, G. Junyent, J. Comellas*	**8:50 Tu.A3.2** Analysis on FTTx deployment and technology in Asia-Pacific and perspective through lessons learned (***Invited***) *S. Hanatani*	**8:50 Tu.A4.2** Quantum-dot based distributed feedback lasers and electro-absorption modulators for datacom applications (***Invited***) *D. Bimberg, M. Stubenrauch, G. Stracke, H. Schmeckebier, D. Arsenijević*	**8:50 Tu.A5.2** Loss compensation in metal-loaded hybrid plasmonic waveguides using Yb^{3+} potassium double tungstate gain materials (***Invited***) *S.M. García-Blanco, M.A. Sefunç, M.H. van Voorden, M. Pollnau*	**8:50 Tu.A6.2** Resonant optical propelling of microspheres: A path to selection of almost identical photonic atoms (***Invited***) *Yangcheng Li, O.V. Svitelskiy, A.V. Maslov, D. Carnegie, E. Rafailov, V.N. Astratov*
9:10 Tu.A1.3 Dynamic flexible grid optical networks: A traffic perspective (***Invited***) *C. Raffaelli, M. Savi*	**9:10 Tu.A2.3** Design and analysis of a framework to enhance optical network utilization resources by means of virtualization (***Invited***) *X. Hesselbach, N. Naumenko*	**9:10 Tu.A3.3** Technologies for next generation optical access (***Invited***) *E. Weis, D. Breuer*	**9:10 Tu.A4.3** Graphene-enabled hybrid architectures for multiprocessors: Bridging nanophotonics and nanoscale wireless communication (***Invited***) *S. Abadal, A. Cabellos-Aparicio, J.A. Lázaro, E. Alarcón, J. Solé-Pareta*	**9:10 Tu.A5.3** Strong plasmon-photon coupling in a quantum metamaterial (***Invited***) *A. Castanié, B. Guizal, D. Felbacq*	**9:10 Tu.A6.3** Optical forces in tight spaces: How confinement of light affects its mechanical action (***Invited***) *L.I. Deych, J.T. Rubin*
9:30 Tu.A1.4 Benefits of sub-band virtual concatenation (VCAT) in CO-OFDM optical networks (***Invited***) *Gangxiang Shen, Anliang Cai, Limei Peng*	**9:30 Tu.A2.4** Collapsing protocol layers for transport networks (***Invited***) *A. Gumaste*	**9:30 Tu.A3.4** Planning and designing FTTH networks: Elements, tools and practical issues (***Invited***) *J. Segarra, V. Sales, J. Prat*	**9:30 Tu.A4.4** Ultra-high-speed optical signal processing of serial data signals (***Invited***) *A.T. Clausen, H.C. Hansen Mulvad, E. Palushani, M. Galili, H. Hu, H. Ji, J. Xu, J. Laguardia Areal, P. Jeppesen, L.K. Oxenløwe*	**9:30 Tu.A5.4** Imaging and characterization of femtosecond surface plasmon wave packets on a silver film (***Invited***) *A. Kubo*	**9:30 Tu.A6.4** Switchable and reconfigurable metamaterials (***Invited***) *N. Zheludev*
9:50 Tu.A1.5 Research trends on ICT convergence from the CaON cluster (***Invited***) *S. Figuerola, D. Simeonidou, J.F. Palacios, A. Di Giglio, N. Ciulli, J.A. Garcia, R. Nejabati, X. Masip, R. Muñoz, G. Landi, M. Yannuzzi, R. Casellas*	**9:50 Tu.A2.5** Experimental demonstration of OpenFlow/GMPLS interworking control plane for IP/DWDM multi-layer optical networks *Lei Liu, T. Tsuritani, I. Morita*	**9:50 Tu.A3.5** Security issues due to reflection in PON physical medium *C. Mendonça, M. Lima, A. Teixeira*	**9:50 Tu.A4.5** Spatial noise reduction in broad area semiconductors (***Invited***) *R. Herrero, M. Botey, N.P. Kumar, K. Staliunas*	**9:50 Tu.A5.5** Surface plasmon interaction with amplifying MQWs in multilayer Kretschmann structure: Wavelength scale analysis by the method of single expression (***Invited***) *H.V. Baghdasaryan, T.M. Knyazyan, T.T. Hovhannisyan, M. Marciniak*	**9:50 Tu.A6.5** Super-resolution imaging by high-index microspheres immersed in a liquid *A. Darafsheh, M.A. Fiddy, V.N. Astratov*
				10:10 Tu.A5.6 Plasmon resonances of an infinite grating of silver wires coated with dielectric envelopes *V.O. Byelobrov, T.M. Benson, A. I. Nosich*	

Coffee break (10:10 – 10:40) | *Coffee break* (10:05 – 10:40) | *Coffee break* (10:05 – 10:40) | *Coffee break* (10:10 – 10:40) | *Coffee break* (10:25 – 10:50) | *Coffee break* (10:05 – 10:40)

SESSION Tu.B1 (10:40 – 12:20) **ICTON IV** *Chair: Milorad Cvijetic*	**SESSION Tu.B2** (10:40 – 12:15) **WAOR IV** *Chair: Nicola Calabretta*	**SESSION Tu.B3** (10:40 – 12:30) **Access II** *Chair: Josep Segarra*	**SESSION Tu.B4** (10:40 – 12:20) **Glasses I** *Chair: Reinhard Caspary*	**SESSION Tu.B5** (10:50 – 12:25) **SWP IV** *Chair: Nigel Johnson*	**SESSION Tu.B6** (10:40 – 12:35) **PAM III** *Chair: Jiří Petráček*
10:40 Tu.B1.1 Static and dynamic spectrum allocation in flexi-grid optical networks (***Invited***) *K. Christodoulopoulos, E. Varvarigos*	**10:40 Tu.B2.1** Efficiency of OBS networks (***Invited***) *Jianan Zhang, Meiqian Wang, Shuo Li, E.W.M. Wong, M. Zukerman*	**10:40 Tu.B3.1** Green, elastic coherent IFDMA-PON for next-generation access network (***Invited***) *Ken-ichi Kitayama, Y. Yopshida, A. Maruta*	**10:40 Tu.B4.1** Investigation of the Faraday effect in tellurite glass optical fibre (***Invited***) *Y. Shiyu, J. Lousteau, M. Olivero, M. Merlo, N.G. Boetti, D. Milanese, Q. Chen, F. Pirri, M. Ferraris, S. Abrate*	**10:50 Tu.B5.1** Thermo-optical attenuator fabricated through direct UV laser writing in organic-inorganic hybrids (***Invited***) *P.G. Marques, A.R. Bastos, C.M.S. Vicente, E. Pecoraro, P.P. Lima, P. S. André, L.D. Carlos, R.A.S. Ferreira*	**10:40 Tu.B6.1** Strong multimode photonic microresonator and nanoparticle interactions (***Invited***) *M. Ostrowski, P. Pignalosa, Y. Yi*

11:00 Tu.B1.2 Software-defined optical OFDM transmission systems: Enabling elasticity in the data plane (*Invited*)
M. Svaluto Moreolo, J.M. Fàbrega, L. Nadal, F.J. Vílchez

11:20 Tu.B1.3 Implementation and validation aspects of network resource provisioning module for the future Internet IIP initiative (*Invited*)
*J. Gozdecki, M. Kantor, **K. Wajda**, W. Molisz, J. Rak*

11:40 Tu.B1.4 Virtual network embedding in optical infrastructures (*Invited*)
*A. Pagès, J. Perelló, **S. Spadaro***

12:00 Tu.B1.5 Dynamic setup of multi-granular services over next-generation OTN/DWDM networks: Blocking versus add/drop port usage (*Invited*)
J. Pedro, J. Santos, R.M. Morais

11:00 Tu.B2.2 Implementation of an OBS access node supporting multiple services (*Invited*)
V. Lopez, S. Lopez-Buedo, J. Aracil, G. Zervas, Yixuan Qin, D. Simeonidou, J. Fernandez-Palacios

11:20 Tu.B2.3 Towards a resource-aware scheduling framework for cost optimization in future media infrastructures deployed over optical networks (*Invited*)
O-D. Ntofon, D.K. Hunter, D. Simeonidou

11:40 Tu.B2.4 On the design of novel multicasting processes: Carrier Ethernet and WDM (*Invited*)
*D. Siracusa, **G. Maier**, A. Valenti, F. Matera*

12:00 Tu.B2.5 Dynamic optical burst grooming in OBS networks
W. Abdallah, N. Boudriga

11:00 Tu.B3.2 OFDMA based PONs with reduced hardware requirements through advanced signal processing (*Invited*)
C. Ruprecht, W. Rosenkranz

11:20 Tu.B3.3 An OFDMA-PON with non-preselected independent ONU sources and centralized feedback wavelength control: Dimensioning and experimental results (*Invited*)
I. Cano, M.C. Santos, X. Escayola, V. Polo, J. Prat, E. Giacoumidis, C. Kachris, I. Tomkos

11:40 Tu.B3.4 Linearization techniques of electro-optical converters for multi-format OFDM-based PONs (*Invited*)
A. Cartaxo, T. Alves, F. Carvalho, J. Morgado

12:00 Tu.B3.5 Upstream performance improvement of low cost 10Gb/s ONUs with centralized OLT equalizer and FEC
I. Cano, S. Porto, A. Naughton, P. Ossieur, P.D. Townsend, J.A. Lázaro, J. Prat

12:15 Tu.B3.6 Symmetric 10Gb/s transmission with IM-IM remodulation in extended WDM PONs
N.B. Pavlović, A. Teixeira

11:00 Tu.B4.2 Dispersion tailoring in chalcogenide slot waveguides, slot arrays and bandgap structures (*Invited*)
E.A. Romanova, A. Konyukhov, Y. Kuzutkina, A. Melnikov

11:20 Tu.B4.3 Modelling of chalcogenide glass fibre lasers for MIR generation (*Invited*)
S. Sujecki, L. Sojka, Z. Tang, T.M. Benson, A.B. Seddon, E. Barney, D. Furniss, E. Beres-Pawlik

11:40 Tu.B4.4 Optical properties of metallophthalocyanine compounds thin films (*Invited*)
A. Zawadzka, P. Płóciennik, J. Strzelecki, Z. Łukasiak, A. Korcala, K. Bartkiewicz, M. Pranaitis, B. Sahraoui

12:00 Tu.B4.5 Azochromophore isomerization dynamics: From monomers to polymers (*Invited*)
*G. Seniutinas, T. Malinauskas, **R. Tomašiūnas**, R. Petruškevičius, I. Petrikytė, V. Getautis*

11:10 Tu.B5.2 Laser-induced periodic surface structures (LIPSS) on polymer surfaces (*Invited*)
J. Heitz, B. Reisinger, M. Fahrner, C. Romanin, J. Siegel, V. Svorcik

11:30 Tu.B5.3 Femtosecond laser assisted multi-ion implantation in dielectrics (*Invited*)
G. Jose, T.T. Fernandez, P. Steenson, A. Jha

11:50 Tu.B5.4 Optimization of pulsed fiber laser scribing for CdTe and CIGS solar cells (*Invited*)
S. Selleri, A. Bosio, A. Cucinotta, M. Sozzi, D. Menossi, Y. Hernandez, A. Bertrand, C. Duterte

12:10 Tu.B5.5 Enhanced broadband optical absorption from nanostructured nickel thin-films for solar energy applications
N. Ahmad, J. Stokes, N.A. Fox, M. Teng, M.J. Cryan

11:00 Tu.B6.2 Optical bottle microresonators: Cleaning-up the spectral mess (*Invited*)
M.N. Zervas

11:20 Tu.B6.3 Axially symmetric modeling of dielectric pillbox resonators (*Invited*)
A. Vukovic, T.M. Benson, P. Sewell, V. Bulygin, A. Nosich

11:40 Tu.B6.4 Progress in the surface nanoscale axial photonics (SNAP) (*Invited*)
M. Sumetsky

12:00 Tu.B6.5 Localized near-field and scattered far-field for surface photonics (*Invited*)
M. Terakawa, M. Obara

12:20 Tu.B6.6 Light scattering from silicon nitride microdisks
D. McCloskey, John F. Donegan

Lunch break (12:20 – 14:30)   *Lunch break* (12:15 –14:30)   *Lunch break* (12:30 –14:30)   *Lunch break* (12:20 –14:30)   *Lunch break* (12:25 –14:30)   *Lunch break* (12:35 – 14:30)

POSTER Session (13:00 – 14:30 Tuesday, July 3)

Tu.P.1 Design equations of flat top super structured fibre Bragg gratings for WDM-coherent direct sequence OCDMA
V. Garcia-Munoz, J. Domenech, R. Baños, W. Amaya, D. Pastor

Tu.P.2 Chromatic dispersion tolerant coherent DS-OCDMA encoding based on SSFBG devices
R. Baños, D. Pastor, W. Amaya, V. Garcia-Munoz

Tu.P.3 Optical filter cascading effects in a phase modulated coherent optical OFDM transmission system based on Hartley transform
M. Chochol, J.M. Fabrega, M. Svaluto Moreolo, G. Junyent

Tu.P.4 Embedded modulable self-tuning cavity for WDM-PON transmitter
*P. Parolari, **L. Marazzi**, M. Brunero, P. Galli, G. Gavioli, M. Martinelli*

Tu.P.5 Accurate calculation of FWM noise power for ultra-dense phase modulated optical systems
M. Jaworski, M. Klinkowski

Tu.P.6 Impact of FWM process on the statistics of a co-propagating quantum signal in a WDM lightwave system
A.J. Almeida, N.A. Silva, P.S. André, A.N. Pinto

Tu.P.7 Supercontinuum based optical thresholder assisted all-optical modulation format conversion from RZ-DQPSK to RZ-OOK
Bo Dai, S. Shimizu, Xu Wang, N. Wada

Tu.P.8 Use of optical receiver circuit design techniques in a transimpedance preamplifier for high performance mass spectrometry
Tzu-Yung Lin, R.J. Green, P.B. O'Connor

Tu.P.9 Novel asymmetrical filtered 40 Gb/s NRZ-DPSK receiver design in a 50GHz grid
O.A. Olubodun, N.J. Doran

Tu.P.10 Performance impact of asymmetric filtered 40Gb/s RZ DPSK system – Tight optical filtering considerations
O.A. Olubodun, N.J Doran

Tu.P.11 Design and simulation of 128-channel 10 GHz AWG for ultra-dense wavelength division multiplexing
D. Seyringer

Tu.P.12 Photonic services
J. Vojtěch, V. Smotlacha, S. Šíma, P. Škoda

Tu.P.13 Optical filtering optimization for NRZ coding format in RSOA-based DWDM PON
Z. Vujicic, N.B. Pavlović, A. Teixeira

Tu.P.14 Study of the optimum pulse-width of clock signal in optical AND gates for application in ultra-fast OTDM networks
A. Yazdani, S. Sallent, D. Rincón, M. Noshad

Tu.P.15 An all-optical OCDMA encoder with simultaneous signal regeneration based on cross-gain modulation in semiconductor optical amplifiers
M.L.F. Abbade, L. Galdino, N.S. Ribeiro, J.D. Marconi, L.H. Bonani, E. Moschim

Tu.P.16 Performance evaluation of optical burst switched mesh networks with localized functional resources
L.H. Bonani

Tu.P.17 Comparisons between Gigabit NRZ, CAP and optical OFDM systems over FEC enhanced POF links using LEDs
J.L. Wei, L. Geng, D.G. Cunningham, R.V. Penty, I.H. White

Tu.P.18 Generation of OFDM signals in the 60 GHz band using the sideband injection locking technique for radio over fiber
I. Aldaya, G. Campuzano, G. Castañón

Tu.P.19 Performance comparison between single and dual-arm MZM in 60 GHz OFDM-RoF system with OSSB modulation
D. Bento, M.C.R. Medeiros, P. Laurêncio

Tu.P.20 A genetic algorithm-based selection of a transmission wavelength in the LOS optical wireless channel
A. Elberjaoui Yakzan, R.J. Green, E.L. Hines

Tu.P.21 Optical properties of Al_2O_3 thin films on quartz glass substrate, prepared by sol-gel method
K. Bartkiewicz, Z. Łukasiak, A. Zawadzka, P. Płóciennik, A. Korcala

Tu.P.22 Evaluation of the temperature increase on the fiber fuse effect end point
F. Domingues, A. Rocha, A.R. Frias, P. André

Tu.P.23 Design of a lithium niobate 2D E-field photonic probe
C. Ciminelli, F. Dell'Olio, M.N. Armenise

Tu.P.24 Highly birefringent microstructured neodymium doped fiber
L. Sojka, L. Pajewski, M. Pilszak, P. Mergo, D. Furniss, A. Seddon, T. M. Benson, S. Sujecki, E. Beres-Pawlik

Tu.P.25 Unperturbed-basis mode interactions via resonance chains in a deformed microcavity
Hojeong Kwak, Younghoon Shin, Songky Moon, Kyungwon An

Tu.P.26 Observation of whispering gallery modes and directional emission from spherical microcavities integrated with TTBC dye J-aggregates
D. Savateeva, D. Melnikau, Y.P. Rakovich

Tu.P.27 Radial polarization of periodically focused modes in chains of dielectric spheres
*A. Darafsheh, **V.N. Astratov***

Tu.P.28 Single-material submicron microstructured fibres for broadband applications in exact slope compensation or zero-dispersion propagation
M. Lucki, D. Jiruse, S. Kraus

Tu.P.29 Asymmetric transmission through diffraction-free optically linear metamaterials
M. Stolarek, A. Pastuszczak, R. Kotyński

Tu.P.30 Mechanical effect on the performance of electrostrictive polymers for energy harvesting
A. Eddiai, M. Meddad, A. Hajjaji, D. Guyomar, Y. Boughaleb, B. Sahraoui

Tu.P.31 Diffusion of Ag dimer on Cu (110) by dissociation-reassociation and concerted jump processes
K. Sbiaai, Y. Boughaleb, JY. Raty, A. Hajjaji, A. Arabaoui, A. Kara, B. Sahraoui

Tu.P.32 Dispersion of linear and nonlinear refractive index in chalcogenide glass
Y. Kuzutkina, A. Melnikov, E. Romanova, V. Kochubey, N.S. Abdel-Moneim, D. Furniss, A. Seddon

Tu.P.33 Investigation on the nonlinear optical properties and luminescence for thin films based on Sn-doped In_2O_3 prepared by the reactive chemical pulverization
Z. Sofiani, M. Addou, K. Bahedi, M. El Jouad, M. Makha, S. Bayoud, N. Fellahi, B. Sahraoui, J. Ebothe

Tu.P.34 A gallium nitride distributed Bragg reflector cavity for integrated photonics applications
N.A. Hueting, J. R. Pugh, E. Engin, A. Md Zain, A. Sarua, P.J. Heard, T. Wang, M.J. Cryan

Tu.P.35 All optical implementation of a stochastic logic gate using a VCSEL with external optical injection
S. Perrone, C. Masoller, R. Vilaseca

Tu.P.36 Evolutionary algorithms for solving routing and wavelength assignment problem in optical networks: A comparative study
*A. Rashedi, **Y.S. Kavian**, A. Mahani, O. Strobel*

Tu.P.37 Expressions of the chirp parameter components for intensity modulation with a dual-electrode Mach-Zehnder modulator
P. Almeida, H. Silva

Tu.P.38 Safety of helicopter transport by means of remote sensing
*A. Ananenkov, V. Nuzhdin, **V. Rastorguev**, P. Sokolov, V. Schneider*

SESSION Tu.C1 (14:30 – 16:10) ICTON V Chair: Milorad Cvijetic	SESSION Tu.C2 (14:30 – 16:20) RONEXT Chair: Paolo Monti	SESSION Tu.C3 (14:30 – 16:10) Access III Chair: Ken-ichi Kitayama	SESSION Tu.C4 (14:30 – 16:05) Glasses II Chair: Sławomir Sujecki	SESSION Tu.C5 (14:30 – 16:10) SWP V Chair: Emmanouil Kriezis	SESSION Tu.C6 (14:30 – 16:05) PAM IV Chair: Yury Rakovich
14:30 **Tu.C1.1** Optical quantization for 6bit photonic A/D conversion (***Invited***) *T. Konishi, K. Takahashi, H. Matsui, T. Satoh*	14:30 **Tu.C2.1** Flexible bandwidth and bit-rate programmability in future optical networks (***Invited***) *B. Teipen, H. Griesser, M.H. Eiselt*	14:30 **Tu.C3.1** MAC protocol requirements for OFDMA-PONs (***Invited***) *Wansu Lim, M. Milosavljevic, A. Gliwan, P. Kourtessis, J.M. Senior*	14:30 **Tu.C4.1** Raman gain in a niobiosilicate glasses (***Invited***) *L. Sirleto, P. Pernice, A. Vergara, A. Aronne, E. Fanelli, G.C. Righini*	14:30 **Tu.C5.1** Time domain models of thin dielectric layers (***Invited***) *P. Sewell, A. Vukovic, T.M. Benson, Xuesong Meng*	14:30 **Tu.C6.1** Multiple ring resonators in optical gyroscopes (***Invited***) *C. Ciminelli, C.E. Campanella, F. Dell'Olio, C.M. Campanella, **M.N. Armenise***
14:50 **Tu.C1.2** Sub-banding DSP for flexible optical transceivers (***Invited***) *M. Nazarathy, A. Tolmachev, S. Ben-Ezra*	14:50 **Tu.C2.2** Selecting the best locations for data centers in resilient optical grid/cloud dimensioning (***Invited***) *B. Jaumard, A. Shaikh, **C. Develder***	14:50 **Tu.C3.2** QoS mapping for LTE backhauling over OFDMA-PONs (***Invited***) *Wansu Lim, **M. Milosavljevic**, P. Kourtessis, J.M. Senior*	14:50 **Tu.C4.2** Polymer optical fiber amplifiers (***Invited***) *R. Caspary, S. Schütz, S. Möhl, A. Cichosch, H-H. Johannes, W. Kowalsky*	14:50 **Tu.C5.2** Modal methods for 3D modelling of advanced photonic structures (***Invited***) *J. Čtyroký, P. Kwiecien, I. Richter, J. Petráček, J. Luksch*	14:50 **Tu.C6.2** A photonic nano-structuring approach to increase energy harvesting for organic photovoltaic cells (***Invited***) *J. Martorell*
15:10 **Tu.C1.3** Flexible optical receivers (***Invited***) *A.N. Pinto, F.P. Guiomar*	15:10 **Tu.C2.3** A path protection algorithm based on OSNR for all-optical networks with wavelength sharing limitation (***Invited***) *R.C. Freitas, E.C.O. Santos, D.A.R. Chaves, H.A. Pereira, C.J.A. Bastos-Filho, **J.F. Martins-Filho***	15:10 **Tu.C3.3** Wavelength switched hybrid TDMA/WDM (TWDM) PON: A flexible next-generation optical access solution (***Invited***) *A. Dixit, B. Lannoo, D. Colle, M. Pickavet, P. Demeester*	15:10 **Tu.C4.3** Biomimetically reinforced transparent nanostructures fabricated by pulsed laser deposition (***Invited***) *T.T. Fernandez, Zhanxiang Zhao, G. Jose, M. Pasha, M. Irannejad, P. Steenson, A. Jha*	15:10 **Tu.C5.3** Nonlinear acousto-optical diffraction by surface and bulk standing acoustic waves (***Invited***) *I.L. Lyubchanskii, N.A. Shevchenko, N.N. Dadoenkova, F.F.L. Bentivegna, Y.P. Lee, T. Rasing*	15:10 **Tu.C6.3** Partially coherent light interaction with nano objects (***Invited***) *M. Premaratne*
15:30 **Tu.C1.4** Phase noise performance of the multilevel interferometric direct detection receivers (***Invited***) *K.G. Kuzmin, N. Karelin, A. Richter, I. Koltchanov, **H. Louchet***	15:30 **Tu.C2.4** Coexistence of advance and immediate reservation in WDM networks: Some RWA strategies (***Invited***) *A. Muhammad, **R. Forchheimer***	15:30 **Tu.C3.4** Efficient resource management via dynamic bandwidth sharing in a WDM-PON ring-based architecture (***Invited***) *K. Ramantas, **K. Vlachos**, G. Ellinas, A. Hadjiantonis*	15:30 **Tu.C4.4** Femtosecond laser direct-written microstructured waveguides in passive as well as in novel active glasses (***Invited***) *A. Fuerbach, S. Gross, M. Alberich, D. Lancaster, H. Ebendorff-Heidepriem, T. Monro, M. Withford*	15:30 **Tu.C5.4** Reflection of a spatial-temporal Airy pulse from a layer (***Invited***) *A. Nerukh, D. Zolotariov, D. Nerukh, T.M. Benson*	15:30 **Tu.C6.4** Simulation of high-Q nanocavities with 1D photonic gap (***Invited***) *J. Petráček, B. Maes, S. Burger, J. Luksch, P. Kwiecien, I. Richter*
15:50 **Tu.C1.5** Digital subcarrier cross-connects (DSXCs) (***Invited***) *Rongqing Hui, Yuanyuan Zhang, M. Hameed, Wanjun Huang, M. Razo, M. Tacca, A. Fumagalli*	15:50 **Tu.C2.5** Availability analysis of optical cross-connect implemented by architecture on demand *M. Džanko, B. Mikac, N. Amaya-Gonzalez, G.S. Zervas, D. Simeonidou*	15:50 **Tu.C3.5** On wavelength blocking for XG-PON coexistence with GPON and WDM-PON networks (***Invited***) *J. Müllerová, D. Korček, M. Dado*	15:50 **Tu.C4.5** Thermal regimes in optical glass modification by the ultra-short laser pulses *A. Konyukhov, A. Melnikov, E. Romanova, A. Mouskeftaras, S. Guizard*	15:50 **Tu.C5.5** Adaptive meshing for optical resonators (***Invited***) *S. Cole, P. Sewell, A. Vukovic, **T.M. Benson***	15:50 **Tu.C6.5** A new photonic atom: Submicron silicon nanocavities with strong magnetic resonances in the optical region *Lei Shi, U. Tuzer, E. Xifré-Pérez, R. Fenollosa, F.J. García de Abajo, F. Meseguer*
	16:05 **Tu.C2.6** On the exponential assumption for the time-to-repair in optical network availability analysis *R.B.R. Lourenço, D.A.A. Mello*				

Coffee break (16:10 -16:40)	***Coffee break*** (16:20 -16:50)	***Coffee break*** (16:10 -16:40)	***Coffee break*** (16:05 -16:30)	***Coffee break*** (16:10 -16:40)	***Coffee break*** (16:05 -16:30)
SESSION Tu.D1 (16:40 – 18:20) ICTON VI Chair: Michela Svaluto Moreolo	SESSION Tu.D2 (16:50 – 18:10) MARS I Chair: Antonio Teixeira	SESSION Tu.D3 (16:40 – 18:20) CTS I Chair: Otto Strobel	SESSION Tu.D4 (16:30 – 18:00) MP Chair: Eszter Udvary	SESSION Tu.D5 (16:40 – 18:20) SWP VI Chair: Trevor Benson	SESSION Tu.D6 (16:30 – 18:30) ESPC II Chair: Toshihiko Baba
16:40 **Tu.D1.1** Optimized PLI-aware virtual optical network composition (***Invited***) *S. Peng, R. Nejabati, E. Escalona, D. Simeonidou, **A. Tzanakaki**, M. Anastasopoulos, K. Georgakilas*	16:50 **Tu.D2.1** National broadband networks: Enlightening the future of nations (***Invited***) *F. Jaffer, B.H.L. Lee*	16:40 **Tu.D3.1** Networks in automotive systems: The potential for optical wireless integration (***Invited***) *R.J. Green, Z. Rihawi, Z.A. Mutalip, M.S. Leeson, M.D. Higgins*	16:30 **Tu.D4.1** Recent implementations of fiber and integrated tunable microwave photonics filters (***Invited***) *J. Sancho, J. Lloret, **S. Sales**, J. Capmany, N. Primerov, L. Thévenaz*	16:40 **Tu.D5.1** Recent advances for high-efficiency sources of single photons based on photonic nanowires (***Invited***) *J.M. Gérard, J. Claudon, M. Munsch, J. Bleuse, N. Gregersen*	16:30 **Tu.D6.1** Recent progress in nonlinear optomechanics in micro/nano-structured optical fibers (***Invited***) *Myeong Soo Kang, A. Butsch, P.St.J. Russell*
17:00 **Tu.D1.2** Multi-core, multi-band and multi-dimensional cognitive optical network: An architecture on demand approach (***Invited***) *G. Zervas, **K. Banias**, B. Rahimzadeh Rofoee, N. Amaya, D. Simeonidou*	17:10 **Tu.D2.2** Network architectures for CPRI backhauling (***Invited***) *A. Lometti, C. Colombo, S. Frigerio, V. Sestito*	17:00 **Tu.D3.2** FlexRay™ electrical physical layer: Theory, components and examples (***Invited***) *J. Minuth*	16:50 **Tu.D4.2** Analog filtered links: An unifying approach for microwave photonic systems (***Invited***) *I. Gasulla, **J. Capmany***	17:00 **Tu.D5.2** Spectrum of the cavity-QED microlaser: Quantum frequency pulling (***Invited***) *Kyungwon An*	16:50 **Tu.D6.2** Nonlinear semiconductor photonic crystal waveguides (***Invited***) *I. Cestier, A. Willinger, V. Eckhouse, G. Eisenstein, S. Combrié, A. De Rossi*

17:20 **Tu.D1.3** A control plane framework for future cognitive heterogeneous optical networks (*Invited*) *D. Siracusa, E. Salvadori, A. Francescon, A. Zanardi, M. Angelou, D. Klonidis, I. Tomkos, R.J. Durán, I. de Miguel*	17:30 **Tu.D2.3** On the cost-effective deployment of future data services over transport networks with a flexible DWDM grid (*Invited*) *A. Eira, **J. Pedro**, R.M. Morais, J. Pires*	17:20 **Tu.D3.3** Mobile radio network development problems (*Invited*) *A. Bogdanov, **V. Shevtsov***	17:10 **Tu.D4.3** Optical transmission of OFDM m-QAM RF signals: Comparison of direct and external modulations (*Invited*) *T. Cseh, **T. Berceli**, E. Udvary, G. Fekete*	17:20 **Tu.D5.3** Localized states, self-pulsing and excitability in VCSELs and microlasers with saturable absorber (*Invited*) *F. Selmi, S. Haddadi, R. Braive, I. Sagnes, R. Kuszelewicz, A. Yacomotti, **S. Barbay***	17:10 **Tu.D6.3** Enhanced gain in photonic crystal amplifiers (*Invited*) ***S. Ek**, E. Semenova, P. Lunnemann, K. Yvind, J. Mørk*
17:40 **Tu.D1.4** Optical code-based filtering architecture for providing access control to all-optical networks (*Invited*) *N. Boudriga, M. Sliti, W. Abdallah*	17:50 **Tu.D2.4** Cost evaluation in optical networks: Node architecture and energy consumption (*Invited*) *A.N. Pinto, R.M. Morais, J. Pedro, P. Monteiro*	17:40 **Tu.D3.4** Physical phenomena affecting VANETs: Open issues in network simulations (*Invited*) *R.M. Scopigno*	17:30 **Tu.D4.4** Numerical analysis of operation of metallic electrodes in Fabry-Perot electro-optical modulator of microwave-photonic receiver *H.V. Baghdasaryan, T.M. Knyazyan, A.K. Aharonyan, M. Marciniak*	17:40 **Tu.D5.4** Colloidal quantum light sources based on asymmetric semiconductor nanocrystals (*Invited*) *F. Pisanello, M. Luigi, **M. De Vittorio**, G. Leménager, A. Bramati, L. Carbone*	17:30 **Tu.D6.4** Modeling of gain saturation effects in active semiconductor photonic crystal waveguides (*Invited*) *Y. Chen, J. Mørk*
18:00 **Tu.D1.5** Contribution to the theory of A_1 numbers (*Invited*) *M. Nikolova Georgieva-Grosse, G. Nikolov Georgiev*		18:00 **Tu.D3.5** Design and prototyping of electric vehicles in Tunisia (*Invited*) *R. Rejeb*	17:45 **Tu.D4.5** Microwave characterisation of optically illuminated silicon *C.D. Gamlath, D. Benton, M.J. Cryan*	18:00 **Tu.D5.5** Formation of metal nanoparticles studied by high resolution time-resolved Fourier-transform infrared spectroscopy (*Invited*) ***S. Civiš**, V.E. Chernov, M. Ferus*	17:50 **Tu.D6.5** Ultrafast tilting of the dispersion of a photonic crystal and on-the-fly adiabatic frequency compression of light pulses (*Invited*) *D.M. Beggs, L. Kuipers, T. Kampfrath, T.F. Krauss*
					18:10 **Tu.D6.6** Efficient free space coupling in 2D semi-conductor photonic crystal nanocavities (*Invited*) *A.M. Yacomotti, S. Haddadi, M. Brunstein, F. Raineri, J.A. Levenson*

19:00 Ragley Hall BBQ and tour at the Ragley Hall

Wednesday, July 4

SESSION We.A1 (8:30 – 10:25) ICTON VII *Chair: Elias Giacoumidis*	SESSION We.A2 (8:30 – 10:25) GOC I *Chair: Sofie Verbrugge*	SESSION We.A3 (8:30 – 10:05) CTS II *Chair: Ridha Rejeb*	SESSION We.A4 (8:30 – 10:00) OWW I *Chair: Roger Green*	SESSION We.A5 (8:30 – 10:10) SWP VII *Chair: František Uherek*	SESSION We.A6 (8:30 – 10:10) ESPC III *Chair: Sara Ek*
8:30 **We.A1.1** Coherent optical OFDM systems based on the fractional Fourier transform (*Invited*) *G. Cincotti*	8:30 **We.A2.1** Power optimization of optical wide area networks (*Invited*) *K.X. Lin, **V.W.S. Chan***	8:30 **We.A3.1** Novel mobility models and localization techniques to enhance location-based services in transportation systems (*Invited*) *K.A. Kastell*	8:30 **We.A4.1** High data rate optical wireless communications: Where next? (*Invited*) *D. O'Brien*	8:30 **We.A5.1** Image formation and applications to third order nonlinear optical measurement techniques (*Invited*) *G. Boudebs*	8:30 **We.A6.1** Tailoring the optical properties by colloidal systems (*Invited*) *A. Chiappini, C. Armellini, D. Ristic, **M. Ferrari**, G.C. Righini*
8:50 **We.A1.2** Stabilization of self-coherent OFDM with injection locked laser (*Invited*) *S. Adhikari, W. Rosenkranz, S. Sygletos, A.D. Ellis, B. Inan, S.L. Jansen*	8:50 **We.A2.2** Mobile backhaul in heterogeneous network deployments: Technology options and power consumption (*Invited*) *P. Monti, S. Tombaz, L. Wosinska, J. Zander*	8:50 **We.A3.2** On the role of wireless sensor networks in intelligent transportation systems (*Invited*) *F. Losilla, A-J. Garcia-Sanchez, F. Garcia-Sanchez, **J. Garcia-Haro***	8:50 **We.A4.2** Effects of aperture averaging and beam width on Gaussian free space optical links in the presence of atmospheric turbulence and pointing error (*Invited*) *It Ee Lee, Z. Ghassemlooy, Wai Pang Ng*	8:50 **We.A5.2** Characterization of laser-induced air plasmas and thin films using third harmonic generation microscopy (*Invited*) *C. Rodriguez, R.A. Weber, D.N. Nguyen, L.A. Emmert, **W. Rudolph***	8:50 **We.A6.2** Single particle detection and self-trapping in hollow photonic crystal cavities integrated in a microfluidic environment (*Invited*) *N. Descharmes, U.P. Dharanipathy, Z. Diao, M. Tonin, **R. Houdré***
9:10 **We.A1.3** Comparison of OFDM and frequency domain equalization for dispersive optical channels with direct detection (*Invited*) *M. Wolf, M. Haardt*	9:10 **We.A2.3** Energy-aware virtual topology reconfiguration under dynamic traffic (*Invited*) *A. Yayimli, **C. Cavdar***	9:10 **We.A3.3** Challenges in the integration of plastic optical fibre technology in aircrafts (*Invited*) *M.A. Losada, J. Mateo, A. Lopez, N. Antoniades, D. Richards*	9:10 **We.A4.3** Analysis of the influence of the particle surface area (PSA) for optical wireless links under fog conditions (*Invited*) *E. Leitgeb, M. S. Khan, M. Löschnigg*	9:10 **We.A5.3** Comparison between quantum mechanical computations of NLO properties and experimental data in selected functionalized azo-dyes (*Invited*) ***B. Sahraoui**, A. Karakas, A. Hajjaji, Y. El kouari, A. Migalska-Zalas*	9:10 **We.A6.3** Photonic-crystal-based polaritonic metamaterials functional at THz (*Invited*) *S. Foteinopoulou*
9:30 **We.A1.4** Applications of optical code based technology for access and secure optical communication (*Invited*) *Xu Wang*	9:30 **We.A2.4** Low-power colourless reflective components for energy-efficient optical networks (*Invited*) ***C.P. Lai**, A. Naughton, P. Ossieur, D.W. Smith, A. Borghesani, D.G. Moodie, G. Maxwell, P. Healey, N. Parsons, R. Jensen, P.D. Townsend*	9:30 **We.A3.4** A fast and robust super-resolved binarization algorithm for license plate recognition (*Invited*) *F. Bouchara, T. Lelore*	9:30 **We.A4.4** The effect of defocus blur on a spatial OFDM optical wireless communication system *M. Rubaiyat, **H. Mondal**, J. Armstrong*	9:30 **We.A5.4** Gaussian pulse mixing and scattering by finite nonlinear layered structures (*Invited*) *O.V. Shramkova, A.G. Schuchinsky*	9:30 **We.A6.4** Photonic crystal nanoslot nanolaser for super-sensitivity bio-sensing (*Invited*) ***T. Baba**, S. Kita, S. Hachuda, S. Otsuka*
9:50 **We.A1.5** Computational photonics from the bottom up (*Invited*) *A. Quandt*	9:50 **We.A2.5** Impact of end-user devices on power consumption of next generation broadband access network (*Invited*) *K. Borzycki*	9:50 **We.A3.5** Availability improvement of ship's optical communication network *I. Jurdana, B. Mikac, V. Tomas*	9:45 **We.A4.5** DPPM FSO communication systems impaired by turbulence, pointing error and ASE noise *A.O. Aladeloba, A.J. Phillips, M.S. Woolfson*	9:50 **We.A5.5** From classical to quantum nonlinear optics in integrated photonic structures (*Invited*) *M. Liscidini, L.G. Helt, J.E. Sipe*	9:50 **We.A6.5** Localization of light in photonic crystals of biological origin (*Invited*) *S. Savić-Šević, D. Pantelić, D. Grujić, **B. Jelenković**, S. Ćurčić, B. Ćurčić, D. Stojanović*
10:10 **We.A1.6** Experimental evaluation of a polarization tracking algorithm for single-polarization M-(D)PSK signals using coherent detection ***P.S. Costa**, M.V. Drummond, R.S. Ribeiro, C. Oliveira, N. Ribeiro, R. Nogueira, P.P. Monteiro*	10:10 **We.A2.6** Energy-aware routing optimization in dynamic GMPLS controlled optical networks *Jiayuan Wang, S. Ricciardi, A. Manolova Fagertun, S. Ruepp, D. Careglio, L. Dittmann*				

Coffee break (10:25 – 10:50) | **Coffee break (10:25 – 10:50)** | **Coffee break (10:05 – 10:40)** | **Coffee break (10:00 – 10:40)** | **Coffee break (10:10 – 10:40)** | **Coffee break (10:10 – 10:40)**

SESSION We.B1 (10:50 – 12:25) ICTON VIII *Chair: Gabriella Cincotti*	SESSION We.B2 (10:50 – 12:40) GOC II *Chair: Caroline Lai*	SESSION We.B3 (10:40 – 12:40) ISOND *Chair: Nicola Calabretta*	SESSION We.B4 (10:40 – 12:15) OWW II *Chair: Jean Armstrong*	SESSION We.B5 (10:40 – 12:20) SWP VIII *Chair: Bouchta Sahraoui*	SESSION We.B6 (10:40 – 12:15) ESPC IV *Chair: Kestutis Staliunas*
10:50 **We.B1.1** Optimum signal constellation design for ultra-high-speed optical transport networks (*Invited*) ***I.B. Djordjevic**, Tao Liu, M. Cvijetic*	10:50 **We.B2.1** Energy efficiency of hybrid optical switching (*Invited*) *S. Aleksić, M. Fiorani, M. Casoni*	10:40 **We.B3.1** Artificial bee colony model for survivable DWDM optical networks design (*Invited*) *A. Rashedi, **Y.S. Kavian**, A. Mahani*	10:40 **We.B4.1** Single-channel wireless transmission at 806 Mbit/s using a white-light LED and a PIN-based receiver(*Invited*) *C. Kottke, K. Habel, L. Grobe, J. Hilt, L. Fernandez del Rosal, A. Paraskevopoulos, **K-D. Langer***	10:40 **We.B5.1** Photonic sensors at the nanoscale (*Invited*) *N.P. Johnson, B. Lahiri, G. Sharp, G.A. Rahman, P. Velha, A. Khokhar, R.M. De La Rue, S. McMeekin*	10:40 **We.B6.1** Design of rare earth doped multicore fiber lasers and amplifiers (*Invited*) *M. Surico, A. Di Tommaso, P. Bia, L. Mescia, M. De Sario, **F. Prudenzano***
11:10 **We.B1.2** 100Gb/s coherent optical polarization multiplexed MultiBand-OFDM (MB-OFDM) transmission for long-haul applications (*Invited*) ***E. Giacoumidis**, C. Gosset, E. Awwad, Y. Jaouën, J. Karaki, E. Pincemin, R. Le Bidan*	11:10 **We.B2.2** Impact of unicast and multicast traffic on ONU energy savings (*Invited*) *L. Valcarenghi, P. Castoldi*	11:00 **We.B3.2** Generating near-optimal survivable topologies (*Invited*) *R.M. Morais, P. Monteiro, A. N. Pinto*	11:00 **We.B4.2** High-speed GaN micro-led arrays for data communications (*Invited*) *A.E. Kelly, J.J.D. McKendry, S. Zhang, D. Massoubre, B.R. Rae, R.P. Green, R.K. Henderson, M.D. Dawson*	11:00 **We.B5.2** Optical temperature sensor on the base of slot waveguide with LC filling (*Invited*) *I. Goncharenko, M. Marciniak*	11:00 **We.B6.2** Silica-air structures for optical fibres (*Invited*) ***W.J. Wadsworth**, M. Rollings, S.A. Bateman, P.J. Mosley*

We.B1 (continued)	We.B2 (continued)	We.B3 (continued)	We.B4 (continued)	We.B5 (continued)	We.B6 (continued)
11:30 We.B1.3 All-optical OFDM and distributed Raman amplification: Challenges to enable high capacities and extended reach (*Invited*) *F.C. Garcia Gunning, P. Frascella, C. Antony, S.J. Fabbri, D. Rafique, S. Sygletos, P. Gunning, D. Reidy, W. McAuliffe, D. Cassidy, A.D. Ellis*	**11:30 We.B2.3** Impact of peers behavior on the energy efficiency of BitTorrent over optical networks (*Invited*) *A.Q. Lawey, T. El-Gorashi, **J.M.H. Elmirghani***	**11:20 We.B3.3** Intelligent optical network traffic monitor design (*Invited*) *Y-K.T. Mo, M.S. Leeson, R.J. Green*	**11:20 We.B4.3** Pulsed mode red VCSEL for high speed VLC communication (*Invited*) *G. Fehér, **E. Udvary**, C. Fűzy, T. Cseh, T. Berceli*	**11:20 We.B5.3** Optical information processing: Advances in nanophotonic reservoir computing (*Invited*) *M. Fiers, K. Vandoorne, T. Van Vaerenbergh, J. Dambre, B. Schrauwen, P. Bienstman*	**11:20 We.B6.3** Development of low loss, wide bandwidth hollow core photonic bandgap fibres for telecom applications (*Invited*) *M.N. Petrovich, N.V. Wheeler, N.K. Baddela, F. Poletti, E. Numkam Fokoua, J.R. Hayes, D.R. Gray, D.J. Richardson*
11:50 We.B1.4 Multi-wavelength regeneration of phase encoded signals based on phase sensitive amplifiers (*Invited*) *S. Sygletos, P. Frascella, F.C. Garcia Gunning, A.D. Ellis*	**11:50 We.B2.4** Optically interconnected data center architecture for bandwidth intensive energy efficient networking (*Invited*) *H. Wang, **K. Bergman***	**11:40 We.B3.4** FPGA based controller for large port count optical packet switches (*Invited*) *N. Calabretta, A. Osers, Jun Luo, H. Dorren*	**11:40 We.B4.4** Mobile optical wireless system using fast beam angle, delay and power adaptation with angle diversity receivers *M.A. Alhartomi, F.E. Alsaadi, J.M.H. Elmirghani*	**11:40 We.B5.4** Multifrequency subsurface sounding and tomography (*Invited*) *K.P. Gaikovich*	**11:40 We.B6.4** Characterization of flexural and longitudinal acoustic waves in standard and photonic crystal fibres (*Invited*) *R. E. da Silva, **A. de Almeida Prado Pohl***
12:10 We.B1.5 Clipping and quantization noise mitigation in intensity-modulated direct detection O-OFDM systems based on the FHT *L. Nadal, M. Svaluto Moreolo, J.M. Fàbrega, G. Junyent*	**12:10 We.B2.5** Energy-efficient lightpaths for computational grids *D. Tafani, B. Kantarci, H.T. Mouftah, C. McArdle, L.P. Barry*	**12:00 We.B3.5** A multi-objective approach to design all-optical and translucent optical networks considering CapEx and QoT (*Invited*) *D.A.R. Chaves, E.A. Barboza, C.J.A. Bastos-Filho, J.F. Martins-Filho*	**12:00 We.B4.5** High-speed wireless infrared links with an adaptive multibeam clustering method and angle diversity detection *M.T. Alresheedi, J.M.H Elmirghani*	**12:00 We.B5.5** Controlling flow of light in the one-way EM waveguide (*Invited*) *V. Kuzmiak, S. Eyderman*	**12:00 We.B6.5** Thermal effects in Yb-doped double-cladding distributed modal filtering rod-type fibers *E. Coscelli, F. Poli, M.M. Joergensen, M. Laurila, J. Laegsgaard, T.T. Alkeskjold, L. Leick, J. Broeng, A. Cucinotta, S. Selleri*
	12:25 We.B2.6 Energy-efficient realistic design and planning of optical backbone with multi-granular switching *N. Naas, **B. Kantarci**, H. Mouftah*	**12:20 We.B3.6** A regional optical transport network testbed in Eastern China: Design and performance study (*Invited*) *Weiqiang Sun, Xiaosheng Zuo, Yaohui Jin, Wei Guo, Weisheng Hu, Xiaoyuan Lu*			

Lunch break (12:25 – 14:00) | **Lunch break** (12:40 – 14:00) | **Lunch break** (12:40 – 14:00) | **Lunch break** (12:15 –13:50) | **Lunch break** (12:20 – 13:50) | **Lunch break** (12:15 –13:50)

SESSION We.C1 (14:00 - 15:55) **ICTON IX** *Chair: Rogério Nogueira*	SESSION We.C2 (14:00 - 15:40) **Tutorial I**	SESSION We.C3 (14:00 - 15:40) **GOWN II** *Chair: Henrique Salgado*	SESSION We.C4 (13:50 - 15:25) **OWW III** *Chair: Erich Leitgeb*	SESSION We.C5 (13:50 - 15:45) **SWP IX** *Chair: Vladimir Kuzmiak*	SESSION We.C6 (13:50 - 15:25) **ESPC V** *Chair: Brana Jelenković*
14:00 We.C1.1 Passive mode-locking of a 10 W double-clad fiber laser (*Invited*) *F. Amrani, A. Niang, M. Salhi, A. Komarov, H. Leblond, F. Sanchez*	**14:00 We.C2** The rise of optical interconnects in data centre networks (*Invited*) *C. Kachris, I. Tomkos*	**14:00 We.C3.1** Convergent radio and fibre access architectures using low-energy systems (*Invited*) *C. Bock, S. Figuerola, M. Parker, T. Quinlan, S. Walker*	**13:50 We.C4.1** Load analysis with gain enhancement for the photoparametric amplifier (*Invited*) *H.A. Alhagagi, **R.J. Green***	**13:50 We.C5.1** Diffractive and subwavelength grating couplers for microphotonic waveguides (*Invited*) *P. Cheben, J. H. Schmid, J. Lapointe, P. Bock, D.-X. Xu, S. Janz, R. Ma, M. Vachon, A. Delâge, C.A. Ramos, R. Halir, L. Zavargo-Peche, A. Ortega-Moñux, Í. Molina-Fernández, J.-M. Fédéli*	**13:50 We.C6.1** Photonic-crystal waveguides with disorder: Measurement of a band-edge tail in the density of states (*Invited*) *P.W.H. Pinkse, S.R. Huisman, G. Ctistis, S. Stobbe, A.P. Mosk, J.L. Herek, A. Lagendijk, P. Lodahl, W.L. Vos*
14:20 We.C1.2 Optical fibers doped by semiconductor quantum dots: Avenue for new fiber laser sources (*Invited*) *A. Bhardwaj, A. Hreibi, W.W. Yu, C. Liu, J. Heo, J.-L. Auguste, J-M. Blondy, F. Gérôme*		**14:20 We.C3.2** The Über-FiWi Network: QoS guarantees for triple-play and future smart grid applications (*Invited*) *M. Lévesque, **M. Maier***	**14:10 We.C4.2** Performance analysis of noise cancellation in a diversity combined ACO-OFDM system (*Invited*) *S.D. Dissanayake, **J. Armstrong**, S. Hranilovic*	**14:10 We.C5.2** Investigation of the fibre to chip coupler designed on SOI platform with subwavelength grating (*Invited*) *J. Chovan, A. Kuzma, **F. Uherek***	**14:10 We.C6.2** Collimation and imaging behind a woodpile photonic crystal (*Invited*) *L. Maigyte, **C. Cojocaru**, J. Trull, K. Staliunas, M. Peckus, V. Mizeikis, M. Malinauskas, M. Rutkauskas, S. Juodkazis*
14:40 We.C1.3 Channelling of a microwave discharge by a plasma filament created in atmospheric air by an intense femtosecond laser pulse (*Invited*) *A.I. Smirnov, A.N. Stepanov*		**14:40 We.C3.3** Comparative study of the performance of CATV channels over DWDM network using direct and external modulator (*Invited*) *M. Niknamfar, R. Barnes, **M. Shadaram***	**14:30 We.C4.3** Visible light technology: A plethora for mobile communications (*Invited*) *A. Vijay, R.J. Green*	**14:30 We.C5.3** Enhanced nanocavity Q-factor via slow light propagation and nonlinear effects (*Invited*) *P. Grinberg, **K. Bencheikh**, M. Brunstein, A. M. Yacomotti, Y. Dumeige, J. A. Levenson*	**14:30 We.C6.3** Beam reflections from one-dimensionally modulated photonic structures (*Invited*) *K. Staliunas, Yu-Chieh Cheng, J. Trull, C. Cojocaru, R. Vilaseca, S. Kicas, M. Peckus, R. Drazdys*
15:00 We.C1.4 Higher-order modulation instability in fiber optics (*Invited*) *M. Erkintalo, K. Hammani, B. Kibler, C. Finot, N. Akhmediev, J.M. Dudley, G. Genty*		**15:00 We.C3.4** Neural network based adaptive predistortion for radio over fiber links *A. Awoye, M.S. Leeson, R.J. Green*	**14:50 We.C4.4** An analysis of intra-vehicle optical wireless communications from a passenger perspective *M. D. Higgins, M.S. Leeson, R.J. Green*	**14:50 We.C5.4** Littrow resonators and their triply resonant nonlinear response (*Invited*) *H. Benisty, N. Piskunov, L.A. Golovan*	**14:50 We.C6.4** Focalization of evanescent beams (*Invited*) *M.M. Botey, Y.C. Cheng, R. Herrero, K. Staliunas, V. Romero-García, R. Pico, V.J. Sánchez-Morcillo*
15:20 We.C1.5 Tunable polarization maintaining fibre lasers (*Invited*) *E. Beres-Pawlik*		**15:20 We.C3.5** Energy-efficient DBA and QoS assurance in "long-reach" FiWi networks (*Invited*) *B. Kantarci, N. Naas, H.T. Mouftah*	**15:10 We.C4.5.** Energy conscious adaptive security scheme for optical wireless *C. Taramonli, R.J. Green, M.S. Leeson*	**15:10 We.C5.5** From rogue waves to random walks: Nonlinear instabilities in supercontinuum generation (*Invited*) *J.M. Dudley, B. Wetzel, S. Turitsyn, K.J. Blow, F. Dias*	**15:10 We.C6.5** Delay bandwidth product enhanced slow light in photonic crystal waveguides *K. Üstün, H. Kurt*
15:40 We.C1.6 New fiber laser architecture with transform-limited nonlinear spectral compression *S. Boscolo, S.K. Turitsyn. C. Finot*				**15:30 We.C5.6** Study of the evolution of different dissipative solitons and phase measurement by Mach-Zehnder interferometry *V. Besse, C. Cassagne, G. Boudebs, H. Leblond*	

Coffee break (15:55 – 16:20) | **Coffee break** (15:40 – 16:10) | **Coffee break** (15:40 – 16:10) | **Coffee break** (15:25 – 16:10) | **Coffee break** (15:45 – 16:10)

SESSION We.D1 (16:20 - 18:15) **ICTON X** *Chair: Tsuyoshi Konishi*	SESSION We.D2 (16:10 –17:10) **Tutorial II**	SESSION We.D3 (16:10 - 17:50) **Access IV** *Chair: Adolfo Cartaxo*	SESSION We.D4 (16:10 - 18:10) **PICAW I** *Chair: Krzysztof Borzycki*	SESSION We.D5 (16:10 - 18:10) **SWP X** *Chair: Oksana Shramkova*	
16:20 We.D1.1 Nonlinearly generated advanced pulse waveforms for optical signal processing (*Invited*) *S. Boscolo, C. Finot*	**We.D2** Optical OFDM (*Invited*) *J. Armstrong*	**16:10 We.D3.1** Demonstration and analyses of a hybrid multiplexing scheme for scaling-up the "last mile" (*Invited*) *I. Glesk, T.B. Osadola, S.K. Idris, K. Sasaki, G.C. Gupta*	**16:10 We.D4.1** Scaling photonic packet switches (*Invited*) *H.J.S. Dorren, S. Di Lucente, J. Luo, N. Calabretta*	**16:10 We.D5.1** Graphene nano-, micro- and macro-photonics (*Invited*) *R.M. De La Rue, H. Ahmad, S. Wadi Harun, W. Chong, Y.K. Yap, C.H Pua, M.Z. Zulkifli, N.M. Huang, S. Abbasirazgaleh, M. Sorel, M. Strain*	
16:40 We.D1.2 Nonlinear sculpturing of optical spectra (*Invited*) *P. Petropoulos, Xin Yang*		**16:30 We.D3.2** Multi-carrier transmitter for future access networks (*Invited*) *Tam Huynh, Rui Zhou, S. Latkowski, F. Smyth, Li. Barry, **P. Anandarajah***	**16:30 We.D4.2** Wavefront and polarization effects in actively tunable thin-film resonators for beam alignment in optical interconnects (*Invited*) *P. Metz, M. C. Krantz, S. Suhr, **M. Gerken***	**16:30 We.D5.2** Ultrafast nonlinearities of minibands in metallodielectric Bragg resonators (*Invited*) *P. Farah, N. Gibbons, F.M. Huang, **J.J. Baumberg***	
17:00 We.D1.3 Cognitive power management in 100G optical transponders (*Invited*) *V.N. Rozental, G. Bruno, G. Lombardi, R. Grosso, **D.A.A. Mello***		**16:50 We.D3.3** WDM overlay of distributed base stations in deployed passive optical networks using coherent optical OFDM transceivers *J.M. Fàbrega, M. Svaluto Moreolo, M. Chochol, G. Junyent*	**16:50 We.D4.3** Optical I/O couplers for WDM optical-interconnect system in package (*Invited*) *S. Ura, J. Inoue, Y. Awatsuji, **K. Kintaka***	**16:50 We.D5.3** Enhancing the performance of mid infrared lasers using structured facets (*Invited*) *M.J. Cryan, J.L. Stokes, J.R. Pugh, S.J.B. Przeslak, P.J. Heard, J.G. Rarity, G.R. Nash*	

We.D (continued)

We.D1	We.D3	We.D4	We.D5
17:20 We.D1.4 Dynamic effects of EDFA spectral hole burning in optical burst switching systems (*Invited*) *E. Bravi, A. Kaszubowska-Anandarajah, R. Giller, R. Oberland, M. Todd, D. McDonald*	**17:05 We.D3.4** Quantitative comparison of low-cost OFDMA-PON transceiver implementations *E. Giacoumidis, A. Kavatzikidis, N. P. Diamantopoulos, S. Mikroulis, I. Tomkos*	**17:10 We.D4.4** Photonic interconnects for chip multiprocessing architectures (*Invited*) *G. Calò, V. Petruzzelli*	**17:10 We.D5.4** Sub-diffraction linear spatial filtering with layered metamaterials (*Invited*) *A. Pastuszczak, M. Stolarek, R. Kasztelanic, R. Kotyński*
17:40 We.D1.5 Designing reliable photonic systems with renewable energy source (*Invited*) *R. Chandy*	**17:20 We.D3.5** Network dimensioning for a TDM-PON deployment single-fibre single-wavelength-reuse based on reflective ONUs *E.T. López, V. Polo, J.A. Lázaro, J. Prat*	**17:30 We.D4.5** Coupled waveguides with MEMS actuation for continuously tunable optical buffering (*Invited*) *P. Horak, W. Stewart, Wei H. Loh*	**17:30 We.D5.5** Metallic samples investigated by using a scattering near field optical microscope (*Invited*) *G.A. Stanciu, C. Stoichita, R. Hristu, S.G. Stanciu, D.E. Tranca*
18:00 We.D1.6 All-optical multi-wavelength auto-controlled synchronizer: Design and performances analysis *S. Batti, N. Boudriga, M. Zghal*	**17:35 We.D3.6** D8PSK/OOK bidirectional transmission over a TDM-PON *N. Sotiropoulos, T. Koonen, H. de Waardt*	**17:50 We.D4.6** Polymer waveguide-based backplanes for board-level optical interconnects (*Invited*) *N. Bamiedakis, A. Hashim, R.V. Penty, I.H. White*	**17:50 We.D5.6** Recent progress in diamond photonics (*Invited*) *T.J. Karle, S. Tomljenovic-Hanic, B.C. Gibson, A.D. Greentree, D. Lau, D. Simpson, A. Stacey, K. Ganesan, A. Hoffman, V. Acosta, Z. Huang, C. Santori, R.G. Beausoleil, S. Prawer*

19:00 *Conference Dinner* in the Panorama Suite

Thursday, July 5

SESSION Th.A1 (9:30 – 11:35) ICTON XI — Chair: *Armin Ehrhardt*	SESSION Th.A2 (9:30 – 11:30) MARS II — Chair: *Armando Nolasco Pinto*	SESSION Th.A3 (9:30 – 10:50) GOWN III — Chair: *Arvind Mishra*	SESSION Th.A4 (9:30 – 11:35) PICAW II — Chair: *Peter Horak*	SESSION Th.A5 (9:30 – 11:40) NAVOLCHI/SOFI — Chair: *Emmanouil-Panagiotis Fitrakis*
9:30 Th.A1.1 Advanced schemes for optical datacommunications (*Invited*) *J.D. Ingham, R.V. Penty, I.H. White*	**9:30 Th.A2.1** On the benefits of open access FTTH networks (*Invited*) *I. Tomkos*	**9:30 Th.A3.1** High-speed frequency control for optical data transmission and radio-on-fiber systems (*Invited*) *T. Kawanishi, A. Kanno, K. Inagaki*	**9:30 Th.A4.1** Integrated optical pulse shaping devices for mode-locked lasers in the 1.5 µm region (*Invited*) *E.A.J.M. Bente, M.S. Tahvili, X.J.M. Leijtens, M.J. Wale, M.K. Smit*	**9:30 Th.A5.1** Chip-to-chip plasmonic interconnects and the activities of EU project NAVOLCHI (*Invited*) *A. Melikyan, M. Sommer, A. Muslija, M. Kohl, S. Muehlbrandt, A. Mishra, V. Calzadilla, Y. Justo, J.P. Martínez-Pastor, I. Tomkos, A. Scandurra, D. Van Thourhout, Z. Hens, M. Smit, W. Freude, C. Koos, J. Leuthold*
9:50 Th.A1.2 Comparison of several pulse position modulation schemes when operating over plastic optical fibre (*Invited*) *M. Sibley*	**9:50 Th.A2.2** Application specific photonic integrated circuits for FlexPON: Progress of the EuroPIC project (*Invited*) *B. Huiszoon, M.M. de Laat, R.L. Duijn, G.N. van den Hoven, K. Lawniczuk, X.J.M. Leijtens, R.G. Broeke*	**9:50 Th.A3.2** Radio-over-fiber (ROF) links based on reflective electro-absorption modulator (REAM) (*Invited*) *Y. Ben-Ezra, D. Brodeski, B.I. Lembrikov*	**9:50 Th.A4.2** Medium and large scale Mach-Zehnder modulator ICs on InP for fabrication of advanced transmitters (*Invited*) *R. Kaiser, K.O. Velthaus, T. Brast, M. Gruner, M. Hamacher, D. Hoffmann, M. Schell*	**9:50 Th.A5.2** Surface plasmon-polariton amplifiers (*Invited*) *I. Suárez, P. Rodriguez-Cantó, R. Abargues, J. Martinez-Pastor, E.P. Fitrakis, I. Tomkos*
10:10 Th.A1.3 Mode group multiplexing over graded-index multimode fiber (*Invited*) *B. Franz, H. Bülow*	**10:10 Th.A2.3** Economic considerations for the electronic control of next generation multi-channel optical transceivers for the access network (*Invited*) *R.M. Dorward, P.A. Callan*	**10:10 Th.A3.3** Transmission limitations of WiMax over fiber transmission employing optical up-conversion schemes *M.C.R. Medeiros, M.P. Thakur, P. Laurêncio, J.E. Mitchell*	**10:10 Th.A4.3** Silicon carrier-depletion-based Mach-Zehnder and ring modulators with different doping patterns for telecommunication and optical interconnect (*Invited*) *Hui Yu, M. Pantouvaki, J. Van Campenhout, K. Komorowska, P. Dumon, P. Verheyen, G. Lepage, P. Absil, D. Korn, D. Hillerkuss, J. Leuthold, R. Baets, W. Bogaerts*	**10:10 Th.A5.3** Low energy routing platforms for optical interconnects using active plasmonics integrated with silicon photonics (*Invited*) *K. Vyrsokinos, S. Papaioannou, N. Pleros, D. Kalavrouziotis, G. Giannoulis, D. Apostolopoulos, H. Avramopoulos, J-C. Weeber, K. Hassan, L. Markey, A. Dereux, A. Kumar, S.I. Bozhevolnyi, M. Baus*
10:30 Th.A1.4 Equalizer complexity of mode-division multiplexed coherent receivers (*Invited*) *B. Inan, N. Hanik, B. Spinnler, S.L. Jansen, D. van den Borne, F. Ferreira, A. Lobato, S. Adhikari, V.A.J.M. Sleiffer*	**10:30 Th.A2.4** Business models and their costs for next generation access optical networks (*Invited*) *S. Verbrugge, K. Casier, C. Mas Machuca*	**10:30 Th.A3.4** Experimental and theoretical performance assessment of WiFi-over-Fiber using low cost directly modulated VCSELs (*Invited*) *D. Coelho, J.M.B. Oliveira, L.M. Pessoa, J.C.S. Castro, H.M. Salgado*	**10:30 Th.A4.4** Wafer bonding techniques for hybrid silicon photonic devices based on surface modifications (*Invited*) *V. Artel, T. Ilovitsh, I. Bakish, M. Shubely, E. Shekel, Y. Ben-Ezra, C.N. Sukenik, A. Zadok*	**10:30 Th.A5.4** Broadband and picosecond intraband absorption in lead based colloidal quantum dots (*Invited*) *B. De Geyter, P. Geiregat, D. Van Thourhout, Yunan Gao, S.T. Cate, A.J. Houtepen, J.M. Schins, L.D.A. Siebbeles, Z. Hens*
10:50 Th.A1.5 Semi-analytical model for linear modal coupling in few-mode fiber transmission *F. Ferreira, P. Monteiro, H. Silva*	**10:50 Th.A2.5** Socio-economic effects of FTTH/FTTx in Sweden (*Invited*) *M. Forzati, C. Mattsson*		**10:50 Th.A4.5** Numerical and experimental investigation of an optical high-Q spiral resonator gyroscope *C. Ciminelli, F. Dell'Olio, C.E. Campanella, M.N. Armenise*	**10:50 Th.A5.5** Silicon-organic hybrid fabrication platform for integrated circuits (*Invited*) *D. Korn, L. Alloatti, M. Lauermann, J. Pfeifle, R. Palmer, P.C. Schindler, W. Freude, C. Koos, J. Leuthold, Hui Yu, W. Bogaerts, K. Komorowska, R. Baets, J. Van Campenhout, P. Verheyen, J. Wouters, M. Moelants, P. Absil, A. Secchi, M. Dispenza, S. Wehrli, M. Bossard, P. Zakynthinos, I. Tomkos*
11:05 Th.A1.6 Polarization-dependent gain in Raman amplification based all-optical polarization control schemes *N.J. Muga, M.F. Ferreira, A.N. Pinto*	**11:10 Th.A2.6** TCP performance in an optical link applying lightpath bundling and anycast switching techniques (*Invited*) *P. Pavon-Marino, J-L. Izquierdo-Zaragoza*		**11:05 Th.A4.6** Building block based design of photonic integrated circuits for generic photonic foundries *D. Melati, F. Morichetti, F.M. Soares, A. Melloni*	**11:10 Th.A5.6** Exploiting photosensitive As_2S_3 chalcogenide glass in photonic integrated circuits *S. Grillanda, A. Canciamilla, F. Morichetti, Juejun Hu, V. Raghunathan, V. Singh, A. Agarwal, L.C. Kimerling, A. Melloni*
11:20 Th.A1.7 Influence of group-velocity dispersion on multilevel phase-preserving amplitude regeneration in a nonlinear amplifying loop mirror *T. Roethlingshoefer, D. Toth, G. Onishchukov, B. Schmauss, G. Leuchs*			**11:20 Th.A4.7** 3D interferometric integrated passive scheme for all optical transform *G. Parca, P. Teixeira, A. Teixeira*	**11:25 Th.A5.7** Towards plasmonic lasers for optical interconnects *V. Dolores-Calzadilla, A. Fiore, M.K. Smit*

(11:45 Thursday, July 5) Plenary hall – Closing Ceremony and Announcement of ICTON 2013

12:30 – 14:00 *Lunch* in the Roots