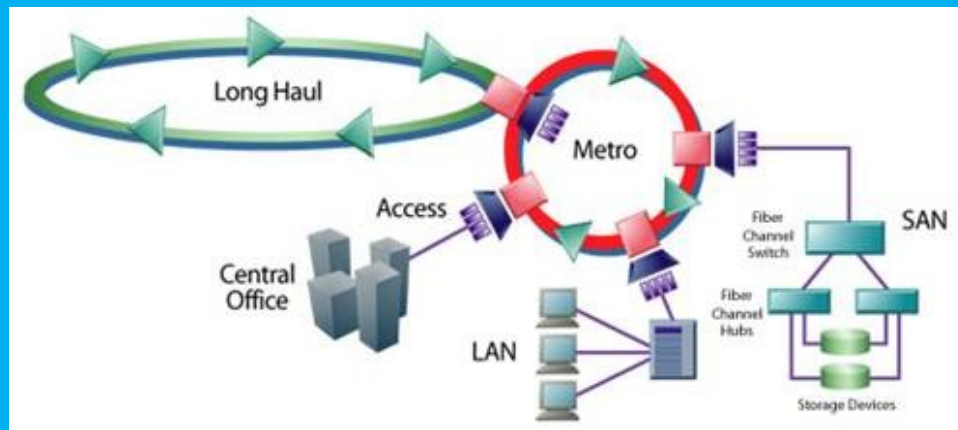




Dr.h.c. Prof. RNDr Ivan Glesk, PhD, DrSc



Professor Ivan Glesk received his M.S. and Ph.D. degree in quantum Electronics and Optics from Comenius University in Bratislava in 1981 and 1989, respectively; the DrSc degree from the Slovak Academy of Sciences in 1998 and Doctor Honoris Causa (Dr.h.c.) from University of Žilina in 2022. In 2024, Professor Glesk was elected a Regular Fellow of The Learned Society of Slovakia.

Dr Glesk started his academic carrier by joining the Department of Experimental Physics at Comenius University in 1986 where he later became Professor of Physics. His research covered nonlinear optics, liquid crystals, and remote sensing by LIDAR.

As a recipient of the IREX Fellowship he was a Visiting Fellow at the Department of Mechanical and Aerospace Engineering at Princeton University, USA, in 1990-1991. In 1991, he joined the Department of Electrical Engineering at Princeton University where he became Senior Research Scholar and Manager of the Lightwave Communication Research Laboratory. In 2007, he joined the Department of Electronic and Electrical Engineering at University of Strathclyde, Glasgow as Professor of Broadband Communication Systems. Currently, he is a Visiting Professor at University of Žilina in Slovakia.

Professor Glesk has co-authored 16 book chapters, over 300 scientific publications, presented 32 invited talks and lectures at various international conferences and institutions, and holds 5 patents. He is a member of several international committees and editorial boards.

Current research interests:

Broadband WDM, OTDM, OCDMA, OFDM communication systems, energy aware networks and optical interconnects for data centres, physical layer data security, optical switching and routing, nanowire/sub-wavelength waveguide-based devices for advanced signal processing and sensing, e-health, applications of AI and machine learning.

Selected Invited Lectures:

- 18 Impact of transformative innovations on the society and new research opportunities, 34th international conference RADIOELEKTRONIKA ²⁰²⁴, University of Žilina, Slovakia, April 17-18, 2024.
- 17 Impact of transformative innovations on the society, new challenges and opportunities, Juniata College, Huntingdon PA, USA, October 2023.
- 16 Towards advanced optical CDMA in light of IT challenges, IMTIC'21, Jamshoro, Pakistan, 10 Nov 2021.

- 15 From IT to ICE, the resulting challenges and the search for solution, McGill University, Montreal, Canada, 2 May 2017.
- 14 Advancements towards all-optical signal processing in light of current IT challenges, RomaTre, Rome, Italy, 7 Dec 2016.
- 13 OCDMA as Data MUX technique for optical broadband networks, Summer school, Slavkov, 15 June 2015.
- 12 Towards data security in communication networks, Summer school, Slavkov, 15 June 2015, Czech Republic.
- 11 Can photonic networking help data centres, University of West Bohemia, Pilsen, 30 April 2014, Czech Republic.
- 10 Towards green high-capacity optical networks, Boskovice, 16 Oct 2013, Czech Republic.
- 9 Applications of advanced photonic devices, CIP/Huawei, Ipswich, 4 May 2012, UK.
- 8 Ultra-fast all optical signal processing for advanced data communication, Université Paris-Sud, Paris, 16 Dec 2011, France.
- 7 Ultrafast all-optical signal processing how and why? EOS Annual Meeting 2010, 26-29 Oct 2010, Parc De Paris, France.
- 6 Improving scalability and data security with Optical CDMA, Canadian National Research Council, Ottawa, Sept 2010, Canada.
- 5 The Internet revolution - its impact and challenges, GRPe Scholars Day, Ross Priory, 30 Sept. 2009, Scotland, UK.
- 4 Ultrafast all-optical data processing, are we ready for it? Canadian National Research Council, Ottawa, May 2009, Canada.
- 3 What comes next in Data Communications, Given at Nanyang Technological University, 12 Dec 2008, Singapore.
- 2 Network scalability and data security of incoherent OCDMA systems by employing ultrafast all-optical signal processing techniques, 3rd International Workshop on OPS & OCDMA, Shanghai, 23-24 Oct 2008, China.
- 1 Towards faster, secure and more energy efficient optical networks, Photonics North 2009, Quebec, 2009, Canada.

Selected Journal Publications:

- 155 M. Masood, M. M. Fouad, R. Kamal, K. Aurangzeb, S. Aslam, Z. Ullah, I. Glesk, “Enhanced optimisation of MPLS network traffic using a novel adjustable Bat algorithm with loudness optimizer,” *Results in engineering* **26** (2025) 104774. <https://doi.org/10.1016/j.rineng.2025.104774>.
- 154 W. Fraser, R. Korcek, I. Glesk, J. Litvik, J. H. Schmid, P. Cheben, W. N. Ye, D. Benedikovic, “High-Efficiency Metamaterial-Engineered Grating Couplers for Silicon Nitride Photonics,” *Nanomaterials* **2024**, *14*(7), 581; <https://doi.org/10.3390/nano14070581>.
- 153 M. Vanko, I. Glesk, J. Müllerova, J. Dubovan, M. Dado, “Design, Optimization, and Experimental Evaluation of Slow Light Generated by π -Phase-Shifted Fiber Bragg Grating for Use in Sensing Applications. *Sensors* **2024**, *24*(2), 340. <https://doi.org/10.3390/s24020340>.
- 152 D. Naves, A. Sanches, R. Nobrega, H. Mrabet, I. Dayoub, K. Ohno, S. Haxha, I. Glesk, A. Jurado-Navas, T. Raddo, “Beyond 5G Fronthaul Based on FSO Using Spread Spectrum Codes and Graphene Modulators,” *Sensors* **2023**, *23*(8), 791. <https://doi.org/10.3390/s23083791>.
- 151 G. Cibira, I. Glesk, J. Dubovan, “SNR-based Denoising Dynamic Statistical Threshold Detection of FBG Spectral Peaks,” *IEEE/OSA Journal of Lightwave Technology* (16 Dec 2022). doi: [10.1109/JLT.2022.3229965](https://doi.org/10.1109/JLT.2022.3229965).

- 150 D. Neves, R. Nobrega, A. Sanches, A. Jurado-Navas, I. Glesk, S. Haxha, T. Raddo, "Power consumption analysis of an optical modulator based on different amounts of graphene," *Optics Continuum* Vol. 1, Issue 9, pp. 2077-2090 (2022). <https://doi.org/10.1364/OPTCON.462268>.
- 149 G. Cibira, I. Glesk, J. Dubovan, "Dynamic Bandwidth Allocation for C-band Shared FBG Sensing and Telecommunications," *IEEE Internet of Things Journal* (2022). doi: [10.1109/JIOT.2022.3188385](https://doi.org/10.1109/JIOT.2022.3188385).
- 148 F-W. Lo, G-Ch. Yang, W-Y. Lin, I. Glesk, W. C. Kwong, "2-D Optical-CDMA Modulation With Hard-Limiting For Automotive Time-of-Flight LiDAR," *IEEE Photonics Journal* 13 (6) 2021. doi: [10.1109/JPHOT.2021.3118875](https://doi.org/10.1109/JPHOT.2021.3118875).
- 147 S. Seyedzadeh, A. Agapio, M. Moghaddasi, M. Dado, Ivan Glesk, "WON-OCDMA System Based on MW-ZCC Codes for Applications in Optical Wireless Sensor Networks," *Sensors* **2021**, 21(2), 539. <https://doi.org/10.3390/s21020539>.
- 146 J. Dubovan, J. Litvik, D. Benedikovic, J. Mullerova, I. Glesk, A. Veselovsky, M. Dado, "Impact of Wind Gust on High-Speed Characteristics of Polarization Mode Dispersion in Optical Power Ground Wire Cables," *Sensors* **2020**, 20(24), 7110; <https://doi.org/10.3390/s20247110>.
- 145 M. Abuhelala, U. A. Korai, A. L. Sanches, W. C. Kwong, I. Glesk, "Investigation of 2D-WH/TS OCDMA code stability in systems with SOA-based devices," *Appl. Sci.* **2020**, 10(21), 7943; <https://doi.org/10.3390/app10217943>. doi:10.3390/app10217943.
- 144 S. Seyedzadeh, F. P. Rahimian, S. Oliver, S. Rodriguez, I. Glesk, "Machine learning modelling for predicting non-domestic buildings energy performance: a model to support deep energy retrofit decision-making," *Applied Energy*, **279** (2020) 115908. <https://doi.org/10.1016/j.apenergy.2020.115908>
- 143 A. K. Umair, A. H. Bermello, M. J. Strain, I. Glesk, A. V. Velasco, "Design of an Athermal Interferometer Based on Tailored Subwavelength Metamaterials for On-Chip Microspectrometry," *IEEE Photonics Journal*, **11** (6), pp. 1-11 (2019). doi: [10.1109/JPHOT.2019.2943774](https://doi.org/10.1109/JPHOT.2019.2943774).
- 142 M. Masood, M. M. Eltaweel, I. Glesk, "An Improved Particle Swarm Algorithm for Multi-Objectives based Optimization in MPLS/GMPLS Networks," *IEEE Access* **7** (1), pp. 137147-137162 (2019). doi: [10.1109/ACCESS.2019.2934946](https://doi.org/10.1109/ACCESS.2019.2934946).
- 141 S. Seyedzadeh, Farzad Rahimian, S. Olive, I. Glesk, B. Kumar, "Data Driven Model Improved by Multi-Objective Optimization for Prediction of Building Energy Loads," *Automation in Construction*, Vol. **116** (August 2020). <https://doi.org/10.1016/j.autcon.2020.103188> .
- 140 F. P. Rahimian, S. Seyedzadeh, I. Glesk, "OCDMA-Based Sensor Network for Monitoring Construction Sites Affected by Vibrations," *Journal of Information Technology in Construction*, Vol. **14**, pp. 299-317 (2019). <http://www.itcon.org/2019/16> .
- 139 C-W. Chang, G-C. Yang, I. Glesk, and W. C. Kwong, "On The Performance of The Effects of Temperature Variation in Ultrafast Incoherent Fiber-Optic CDMA Systems with SOA-Based Tunable Dispersion Compensator," *IEEE Journal of Photonics*, **11** (3), pp. 1-10 (June 2019). doi: [10.1109/JPHOT.2019.2917818](https://doi.org/10.1109/JPHOT.2019.2917818).
- 138 S. Seyedzadeh, F. P. Rahimian, I. Glesk, M. Roper, P. Rastogi, "Tuning Machine Learning Models for Prediction of Building Energy Loads," *Sustainable Cities and Society*, Vol. **47**, 101484 (2019). doi: [10.1016/j.scs.2019.101484](https://doi.org/10.1016/j.scs.2019.101484).
- 137 A K. Umair, Z. Wang, C. Lacava, L. R. Chen, I. Glesk, M. J. Strain, "Technique for the measurement of picosecond optical pulses using a non-linear fiber loop mirror and an optical power meter," *Opt. Exp.* **27** (5), pp. 6377-6388 (2019). doi: <https://doi.org/10.1364/OE.27.006377>

- 136 L. R. Chen, J. Wang, B. Naghdi, and I. Glesk, "Subwavelength Grating Waveguide Devices for Telecommunications Applications," *IEEE Journal of Selected Topics in Quantum Electronics (JSTQE)*, **25** (3), 8200111 (May-June 2019). doi: 10.1109/JSTQE.2018.2879015.
- 135 S. Seyedzadeh, F. P. Rahimian, I. Glesk, M. Roper, "Machine Learning for Estimation of Building Energy Consumption and Performance: A Review," *Visualization in Engineering*, **6** (1), 5 (2018). doi: 10.1186/s40327-018-0064-7.
- 134 Md S. Ahmed and I. Glesk, "Application of Semiconductor Optical Amplifier (SOA) in Managing Chirp of Optical Code Division Multiple Access (OCDMA) Code Carriers in Temperature Affected Fibre Link. *Appl. Sci.*, **8** (5), 715 (2018). doi: <https://doi.org/10.3390/app8050715133>. Invited.
- 133 Md S. Ahmed and I. Glesk, "Management of OCDMA Auto-correlation Width by Chirp Manipulation Using SOA," *IEEE Photon. Technol. Lett.* **30**(9), pp. 785-789 (May 1, 2018). doi: 10.1109/LPT.2018.2814788.
- 132 S. Hannah, A. Davidson, I. Glesk, D. Uttamchandani, R. Dahiya, and H. Gleskova, "Multifunctional sensor based on organic field-effect transistor and ferroelectric poly(vinylidene fluoride trifluoroethylene)," *Organic Electron.*, Vol. **56**, pp. 170–177 (May 2018). <https://doi.org/10.1016/j.orgel.2018.01.041>.
- 131 Z. Wang, I. Glesk, L. R. Chen, "An Integrated Nonlinear Optical Loop Mirror in Silicon Photonics for All-optical Signal Processing," *APL Photonics*, Vol. 3, No. 2, 026102 (2018).
- 130 Md Shakil Ahmed, and Ivan Glesk, "Mitigation of Temperature Induced Dispersion in Optical Fiber on OCDMA Auto-correlation," *IEEE Photon. Technol. Lett.*, **29** (22), pp. 1979-1982 (2017). doi 10.1109/LPT.2017.2758163.
- 129 A. Davidson, A. Buis, and I. Glesk, "Novel Wearable Pyroelectric Temperature Sensor for Medical Applications," *IEEE Sensors Journal*, **17** (20), pp. 6682-6689 (Oct. 15, 2017). doi: 10.1109/JSEN.2017.2744181.
- 128 M. Moghaddasi, S. Seyedzadeh, I. Glesk, G. Lakshminarayana, and S. B. A. Anas, "DW-ZCC Code Based on SAC OCDMA Deploying Multi-Wavelength Laser Source for Wireless Optical Networks," *Optical and Quantum Electronics* **49**: 393 (2017). <https://doi.org/10.1007/s11082-017-1217-y>.
- 127 S. Seyedzadeh, F. P. Rahimian, I. Glesk, and M. H. Kakaee, "Variable Weight Multi-Service OCDMA Code for Optical Domain Prioritization," *Optical Fiber Technology*, vol. 37, Sept. (2017), pp. 53-60 (2017). <https://doi.org/10.1016/j.yofte.2017.07.002>.
- 126 Y. Zakaria, L. Ivanek, I. Glesk, "Propagation Measurements and Estimation of Channel Propagation Models in Urban Environment," *KSII Transactions on Internet and Information Systems*, **11** (5), pp. 2453-2467 (2017). <https://doi.org/10.3837/tiis.2017.05.008>.
- 125 Md. S. Ahmed, M. S. Kh. Abuhelala, and I. Glesk, "Managing Dispersion Affected OCDMA Auto-correlation Based on PS Multi-wavelength Code Carriers Using SOA," *Journal of Optical Communications and Networking* **9** (8), pp. 693-698 (2017). <https://doi.org/10.1364/JOCN.9.000693>.
- 124 I. Glesk, T. Osadola, W. C. Kwong, "Towards higher scalability of hybrid optical CDMA network," *Opt Quant Electron.*, **49**:267 (2017). doi:10.1007/s11082-017-1101-9.
- 123 C.-Y. Tsai, G.-C. Yang, J.-S. Lin, C.-Y. Chang, I. Glesk, and W. C. Kwong, "Pulse-Power-Detection Analysis of Incoherent O-CDMA Systems under the Influence of Fiber Temperature Fluctuations," *J. Lightwave Tech.*, **35** (12), pp. 23-2379 (2017). doi: 10.1109/JLT.2017.2690992.
- 122 N. Mathur, G. Paul, J. Irvine, M. Abuhelala, A. Buis, I. Glesk, "Towards a Low Cost Platform for

Remote Monitoring of Lower Limb Health of Amputees in the Developing World," IEEE Access **4**, pp. 7440-7451 (2016). doi: 10.1109/ACCESS.2016.2622163.

- 121 J. Wang, I. Glesk, and L. R. Chen, "Subwavelength grating devices in Silicone photonics," Science Bulletin., **61** (11), pp. 879-888 (2016). doi 10.1007/s11434-016-1077-z. Invited.
- 120 M. Masood, M. Abuhelala, and I. Glesk, "A comprehensive study of Routing Protocols Performance with Topological Changes in the Networks," International Journal of Electronics, Electrical and Computational System (IJECS), **5** (8) pp. 31-40 (2016).
- 119 R. Struebig and I. Glesk, "Optical high voltage breakdown prediction using thermal lensing effect in transformer oil, "Renewable Energy & Power Quality Journal (RE&PQJ), No. **14**, 295 (2016), ISSN: 2172-038X.
- 118 N. Mathur, I. Glesk, and A. Buis, "Comparison of adaptive neuro-fuzzy inference system (ANFIS) and Gaussian processes for machine learning (GPML) algorithms for the prediction of skin temperature in lower limb prostheses," Elsevier Journal-Medical Engineering & Physics **38** (10), pp. 1083-1089 (2016). doi: <http://dx.doi.org/10.1016/j.medengphy.2016.07.003>.
- 117 J. Wang, R. Ashrafi, R. Adams, I. Glesk, I. Gasulla, J. Capmany, and L. R. Chen, "Subwavelength grating enabled on-chip ultra-compact optical true time delay line," Scientific Reports **6**, Article number 30232 (2016). doi: 10.1038/srep30235.
- 116 A. Davidson, I. Glesk, and A. Buis, "The rising role of photonics in today's data centres," Rev. Cub. Fis. **33** (1E), pp. E17-E25 (2016)
- 115 S. Kepak, J. Cubik, P. Zavodny, A. Davidson, I. Glesk, and V. Vasinek, "Fibre optic track vibration monitoring system," Optical and Quantum Electronics **48** (7), pp. 354-361 (2016). doi: 10.1007/s11082-016-0616-9.
- 114 N. Mathur, I. Glesk, A. Buis, "Thermal Time Constant: optimizing the skin temperature predictive modelling in lower limb prostheses using Gaussian processes," IET Healthcare Technology Letters **3** (2) pp. 98-104 (2016). doi: 10.1049/htl.2015.0023.
- 113 Md S. Ahmed and I. Glesk, "Photonic platform and the impact of optical nonlinearity on communication devices," Acta Physica Slovaca **65** (2), pp. 65-152, April (2015). Invited.
- 112 M. N. Mohd Warip, I. Andonovic, I. Glesk, R. B. Ahmad, P. Ehkan, L. M. Kamarudin, M. Elshaikh, "Energy efficient partition-lightpath scheme for IP over WDM core networks," Procedia Computer Science **52** (1), pp. 515-522 (2015). doi: 10.1016/j.procs.2015.05.0.
- 111 N. Mathur, I. Glesk, and A. Buis, "Skin Temperature Prediction in Lower Limb Prosthetics," IEEE Biomedical and Health Informatics **20** (1), pp. 158-165 (2015). <http://dx.doi.org/10.1109/JBHI.2014.2368774>.
- 110 J. Wang, I. Glesk, L. R. Chen, "Subwavelength grating Bragg grating filters in silicon-on-insulator," Electronics Letters **51** (9), pp. 712-714 April 30, 2015. doi:10.1049/el.2015.054.
- 109 M. N. Mohd Warip, I. Andonovic, I. Glesk, R. B. Ahmad, P. Ehkan, M. Elshaikh, E. S. Ahmed, J. S. Elias, and S.F.F. Zakaria, "Design for energy-aware IP over WDM networks with hibernation mode and group-node techniques," Lecture Notes in Electrical Engineering **315**, pp. 151-162 (2015). doi: 10.1007/978-3-319-07674-4_16.
- 108 J. Wang, I. Glesk, L. R. Chen, "Subwavelength Grating Filtering Devices," Optics Express **22** (13), pp. 15335-15345 (2014). doi: 10.1364/OE.22.015335.
- 107 A. Davidson, I. Glesk, and A. Buis, "Has silicon reached its limit?" Advances in Electrical and Electronic Engineering **12** (6), pp. 590-598 (2014). Special Issue. doi: 10.15598/aeec.v12i6.1227.
- 106 M. N. Mohd Warip, I. Andonovic, I. Glesk, P. Ehkan, F. A. A. Fuad, and M. E. E. S. Ahmed, "Energy Efficient Segmentation-Link Strategies for Transparent IP over WDM Core Networks," Journal of Communications **9** (1) pp. 48-55 (2014). ISSN: 1796-2021.

- 105 T. B. Osadola, S. K. Idris, and I. Glesk, "Improving Multi Access Interference Suppression in Optical CDMA by using All-Optical Signal Processing," *Quantum Electronics, TELFOR Journal*, 5 (1), pp. 48-53, Nov. 2013. <http://journal.telfor.rs/Published/Vol5No1/Vol5No1.aspx>. Invited paper.
- 104 S. K. Idris, T. B. Osadola, and I. Glesk, "Investigation of All-Optical Switching OCDMA Testbed under the Influence of Chromatic Dispersion and Timing Jitter," *Journal of Engineering Technology* 4 (1), pp. 41-53, (2013).
- 103 S. K. Idris, T. B. Osadola, and I. Glesk, "Towards Self-Clocked Gated OCDMA Receiver," *J. Europ. Opt. Soc. Rap. Public.* 8, 13013-1303-6 (2013). doi: <http://dx.doi.org/10.2971/jeos.2013.13013>.
- 102 S. K. Idris, T. B. Osadola, and I. Glesk, "OCDMA Receiver with in-Built all-Optical Clock Recovery," *Electronics Lett.* 49 (2), pp. 143 (2013). doi: 10.1049/el.2012.3110.
- 101 T. B. Osadola, S. K. Idris, I. Glesk, and W. C. Kwong, "Effect of Environmental Variations in Temperature on 2D-WH/TS OCDMA Code Performance," *Journal of Optical Communications and Networking* 5 (1), pp. 68 - 73 (2013). <http://dx.doi.org/10.1364/JOCN.5.000068>.
- 100 I. Glesk, P. J. Bock, P. Cheben, J. H. Schmid, J. Lapointe, and S. Janz, "Picosecond All-Optical Switching Using Nonlinear Mach-Zehnder with Silicon Subwavelength Grating and Photonic Wire Arms," *Optical and Quantum Electronics* 44 (12) pp. 613-621 (2012). Invited paper. doi: 10.1007/s11082-012-9609-5.
- 99 T. B. Osadola, S. K. Idris, I. Glesk, and W. C. Kwong, "Network Scaling Using OCDMA over OTDM," *IEEE Photon. Tech. Lett.* 24 (5) 395-397, March 2012. doi: 10.1109/LPT.2011.2179924.
- 98 I. Glesk, P. J. Bock, P. Cheben, J. H. Schmid, J. Lapointe, and S. Janz, "All-Optical Switching using Nonlinear Subwavelength Mach-Zehnder on Silicon," *Optics Express* 19 (15), pp.14031-14039 (2011). doi: 10.1364/OE.19.014031.
- 97 T. B. Osadola, S. K. Idris, I. Glesk, K. Sasaki, and G. C. Gupta, "In situ Method for Power Re-Equalization of Wavelength Pulses Inside of OCDMA Codes," *IEEE Journal of Quantum Electronics* 47 (8), pp. 1053-1058 (2011). doi: 10.1109/JQE.2011.2157305.
- 96 I. Glesk, M.N.M. Warip, and I. Andonovic, "Increasing transmission efficiency with advanced processing," *Renewable Energy and Power Quality Journal*, No.9, 12th May 2011, paper 274, ISSN: 2172-038XN, [online] <http://www.icrepq.com/rev-papers.htm>.
- 95 I. Glesk, I. Andonovic, and C. Michie, "Increasing Transmission Efficiency with Advanced Signal Processing," *Renewable Energy and Power Quality Journal*, 8, 270 April (2010) RE&PQJ-8, ISSN 2172-038X. [online] <http://www.icrepq.com/rev-papers.htm>.
- 94 I. Glesk, M. Sorel, A. E. Kelly, and P.R. Prucnal, "Enhancing Performance of Optical Communication Systems with Advanced Optical Signal Processing," *Journal of Networks Special Issue on All-Optically Routed Networks, Journal of Networks* 5 (11), pp.1328-1333, Nov 2010. (JNW, ISSN 1796-2056. doi:10.4304/jnw.5.11.1328-1334).
- 93 I. Glesk, P. R. Prucnal, and I. Andonovic, "Incoherent Ultrafast OCDMA Receiver Design with 2 ps All-Optical Time Gate to Suppress Multiple-Access Interference," *IEEE Journal of Selected Topics in Quantum Electronics (JSTQE)*, 14 (3) MAY/JUNE (2008). (ISSN: 1077-260X. doi: 10.1109/JSTQE.2008.916532).
- 92 Y-K. Huang, B. Wu, I. Glesk, and P. R. Prucnal, "Combining cryptographic and steganographic security with self-wrapped optical code division multiplexing techniques," *Electronics Letters* 43 (25), pp. 1449-1451, DEC 6 (2007)

- 91 Y.-K. Huang, V. Baby, I. Glesk, C-S. Brès, P. R. Prucnal, C.M. Greiner, D. Iazikov, and T. W. Mossberg, "Novel Multi-Code Processing Platform for Wavelength-Hopping Time-Spreading Optical CDMA - A Path to Device Miniaturization and Enhanced Network Functionality," *IEEE JSTQE* **13** (5) Part 2, pp. 1471-1479 Sept-Oct (2007).
- 90 C. Michie, I. Andonovic, Y. Deng, J. Szefer, C.-S. Brès, Y.-K. Huang, I. Glesk, P. R. Prucnal, K. Sasaki, and G. Gupta, "Interferometric Noise Characterization of a 2-D Time Spreading Wavelength Hopping OCDMA Networks using FBG Encoding/Decoding," *Journal of Optical Networking* **6**, pp. 663-676 (2007).
- 89 C-S. Brès, Y.-K. Huang, I. Glesk, and P.R. Prucnal, "Scalable Asynchronous Incoherent Optical CDMA," *Journal of Optical Networking* **6**, 599-615 (2007). Invited.
- 88 Y-K. Huang, I. Glesk, Ch.M. Greiner, D. Iazikov, T.W. Mossberg, T. Wang, and P.R. Prucnal, "Single Integrated Device for Optical CDMA Code Processing in Multi-Code Environment," *Optics Express* **15**, pp. 7327-7334 (2007).
- 87 D. Rand, I. Glesk, C-S Brès, D. A. Nolan, X. Chen, J. Koh, J. W. Fleischer, K. Stieglitz, and P. R. Prucnal, "Observation of temporal vector soliton propagation and collision in birefringent fiber," *Phys. Rev. Lett.* **98** (5) Art. No. 053902 FEB 2 (2007).
- 86 C-S. Brès, I. Glesk, and P. R. Prucnal, "Tunable 2D time-wavelength optical CDMA encoder for differentiated service provisioning," *Optics Communications* **271** (1), pp.116-118 MAR 1 (2007).
- 85 I. Glesk, Y.-K. Huang, C-S. Brès, and P. R. Prucnal, "Design and demonstration of a novel Optical CDMA platform for avionics applications," *Optics Communications* **271** (1), pp.65-70 March (2007).
- 84 C-S. Brès, Y.-K. Huang, D. Rand, I. Glesk, P. R. Prucnal, T. Bazan, C. Michie, D. Harle, and I. Andonovic, "On the Experimental Characterization of Beat Noise in 2-D Time-Spreading Wavelength-Hopping OCDMA Systems," *IEEE Photonics Technology Letters* **18** (21), pp. 2314-2316 (2006).
- 83 Y.-K. Huang, I. Glesk, R. Shankar, and P. R. Prucnal, "Simultaneous all-optical 3R regeneration scheme with improved scalability using TOAD, *Optics Express*," **14** (22), pp. 10339-10344 (2006).
- 82 C-S. Brès, T. Banwell, I. Glesk, P. R. Prucnal, and W. C. Kwong, "Optical pulse position modulation processing: architecture and demonstration in an optical code division multiple access system," *Journal of Optical Networking* **5** (12), pp. 915-926 Dec. (2006).
- 81 I. Glesk, Y-K. Huang, C.-S. Brès, and P. R. Prucnal, "OCDMA platform for avionics applications," *Electronics Letters* **42** (19), pp. 1115-1116 (2006).
- 80 V. Baby, I. Glesk, Y-K. Huang, C.-S. Brès, L. Xu, and P. R. Prucnal, "Demonstration of all-optical format conversion from wavelength-hopping time-spreading to non-return-to-zero," *Optics Communications* **262** (1), pp. 27-31 JUN 1 (2006).
- 79 C-S. Brès, I. Glesk, and P. R. Prucnal, "Demonstration of an Eight-User 115-Gchip/s Incoherent OCDMA System Using Supercontinuum Generation and Optical Time Gating," *IEEE Photonics Technology Letters* **18** (7), pp. 889-891 (2006)
- 78 V. Baby, R. J. Runser, I. Glesk, and P. R. Prucnal, "Analysis of a rapidly reconfigurable multicast capable photonic switched interconnect, *Optics Communications* **253** (1-3), pp. 76-86 SEP 1 (2005).
- 77 L. Xu, T. Wang, O. Matsuda, M. Cvijetic, I. Glesk, and P. R. Prucnal, "Wavelength-Shift-Keying (WSK) Encoded Pulse for Optical Labelling Applications," *IEEE Photonics Technology Letters* **17** (12), pp. 2775-255 (2005).

- 76 C-S. Brès, I. Glesk, and P. R. Prucnal, "Demonstration of a transparent router for wavelength-hopping time-spreading optical CDMA," *Optics Communications* **256** (1-3), pp. 58-66 (2005).
- 75 C-S. Brès, I. Glesk, R. Runser, and P. R. Prucnal, "All Optical Code Drop Unit for Transparent Ring Networks," *IEEE Photonics Technology Letters* **17** (5), pp. 1088-1091 (2005).
- 74 I. Glesk, V. Baby, C-S. Brès, L. Xu, D. Rand, P. R. Prucnal, and C.W. Kwong, "A design of a wavelength-hopping time-spreading incoherent optical code division multiple access system," *Acta Physica Slovaca* **55** (2) 211-227 (2005).
- 73 I. Glesk, V. Baby, C.-S. Brès, L. Xu, D. Rand, and P. R. Prucnal, "A Fast Frequency-Hopping Time-Spreading Incoherent Optical CDMA System," *Jemná mechanika a optika* **11-12**, pp. 326-332 (2004).
- 72 V. Baby, I. Glesk, R. J. Runser, R. Fischer, Y-K. Huang, C-S. Brès, W. C. Kwong, T. H. Curtis, and P. R. Prucnal, "Experimental Demonstration and Scalability Analysis of a Four-node 102 Gbit/s Fast Frequency-hopping Time-Spreading Optical CDMA," *IEEE Photonics Technology Letters* **17** (1), pp. 253-255 (2005).
- 71 L. Xu, V. Baby, I. Glesk, P. R. Prucnal, "New description of transmission of an SOA-based Sagnac loop and its application for NRZ wavelength conversion," *Optics Communications* **244** (1-6), pp. 199-208 JAN 3 (2005).
- 70 V. Baby, C-S. Brès, L. Xu, I. Glesk, and P. R. Prucnal, "Demonstration of differentiated service provisioning with 4-node 253Gchip/s fast frequency-hopping time-spreading OCDMA," *Electronics Letters* **18** (6), pp. 385-387 (2004).
- 69 I. Glesk, V. Baby, C-S. Brès, L. Xu, D. Rand, and P. R. Prucnal, "Experimental demonstration of 2.5 Gbit/s incoherent two dimensional optical code division multiple access system," *Acta Physica Slovaca* **54** (3), pp. 245-250 (2004).
- 68 V. Baby, C-S. Brès, L. Xu, I. Glesk, and P. R. Prucnal, "Wavelength aware receiver for enhanced 2D OCDMA system performance," *Electronics Letters* **40** (6), pp. 385-387 MAR 18 (2004).
- 67 L. Xu, V. Baby, I. Glesk, and P. R. Prucnal, "All-optical wavelength conversion using SOA at nearly symmetric position in a fiber-based Sagnac interferometric loop," *IEEE Photonics Technology Letters* **16** (2), pp. 539-541 (2004).
- 66 L. Xu, I. Glesk, D. Rand, V. Baby, P. R. Prucnal, "Suppression of beating noise of narrow linewidth Erbium doped fiber ring lasers using SOA," *Optics Letters* **28**, pp. 780, (2003). Reported by Photonics Spectra, (Photonics Research), Eliminating beat noise in ring lasers, by Breck Hitz, pp. 104-106, July, (2003).
- 65 V. M. Menon, W. Tong, C. Li, F. Xia, I. Glesk, P. R. Prucnal, and S. R. Forrest, "All-Optical Wavelength Conversion Using a Regrowth-Free Monolithically Integrated Sagnac Interferometer," *IEEE Photonics Technology Letters* **15** (2), pp. 254-256 (2003).
- 64 V. Baby, B.C. Wang, L. Xu, I. Glesk, and P. R. Prucnal, "Highly scalable serial-parallel optical delay line," *Optics Communications* **218** (4-6), pp. 235-242 APR 1 (2003).
- 63 I. Glesk, L. Xu, D. Rand, and P. R. Prucnal, "Wavelength tunable semiconductor fiber ring laser through electro-optical polarization control," *Acta Physica Slovaca* **53** (5), pp. 413-416 (2003).
- 62 L. Xu, D. Rand, V. Baby, I. Glesk, and P. R. Prucnal, "Suppression of beating noise of narrow linewidth Erbium doped fiber ring lasers using Semiconductor Optical Amplifier," *Optics Letters* **28** (10), pp. 780-782 (2003).
- 61 L. Xu, B. C. Wang, V. Baby, I. Glesk, and P. R. Prucnal, "All-Optical Data Format Conversion between RZ and NRZ Based on a Mach-Zehnder Interferometric Wavelength Converter," *IEEE Photonics Technology Letters* **15** (2), pp. 308-310 (2003).

- 60 B. C. Wang, V. Baby, L. Xu, I. Glesk, and P. R. Prucnal, "173-ps Wavelength Switching of Four DWDM Channels Using an OTDM Channel Selector," *IEEE Photonics Technology Letters* **14** (11), pp. 620-622 (2002).
- 59 P. R. Prucnal, V. Baby, D. Rand, B. C. Wang, and I. Glesk, "All-optical Processing in Switching Networks, *IEEE LEOS Newsletter* **16** (4), pp. 13-14 (2002).
- 58 L. Xu, B. C. Wang, V. Baby, I. Glesk, and P. R. Prucnal, "Performance-improved All-optical RZ to NRZ Format Conversion Using Duplicator and Wavelength Converter, *Optics Communications* **206**, pp. 77-80 (2002).
- 57 B. C. Wang, L. Xu, V. Baby, I. Glesk, and P. R. Prucnal, "State selection of a bistable SOA ring laser for bit level optical memory applications," *IEEE Photonics Technology Letters* **14**, pp. 989-991 (2002).
- 56 B. C. Wang, V. Baby, W. Tong, L. Xu, M. Friedman, R. J. Runser, I. Glesk, and P. R. Prucnal, "A novel fast optical switch based on two cascaded Terahertz Optical Asymmetric Demultiplexers (TOAD) ," *Optics Express* **10**, pp. 15-23 (2002).
- 55 L. Xu, M. Yao, B. C. Wang, I. Glesk, and P. R. Prucnal, All-optical Clock Division with Mode-locked Figure-eight Laser Based on the Slow Carrier Recovery Rate in Semiconductor Optical Amplifier, *IEEE Photonics Technology Letters* **14** (3), pp. 402-404 (2002).
- 54 L. Xu, B. C. Wang, V. Baby, I. Glesk, and P. R. Prucnal, "Optical Spectral Bistability in a Semiconductor Fiber Ring Laser through Gain Saturation in a SOA," *IEEE Photonics Technology Letters* **14** (2), pp. 149-150 (2002).
- 53 B. C. Wang, L. Xu, V. Baby, D. Zhou, R. J. Runser, I. Glesk, and P. R. Prucnal, "Experimental Study on the Regeneration Capability of the Terahertz Optical Asymmetric Demultiplexer," *Optics Communications* **199** (1-4), pp. 83-88 (2001).
- 52 B. Wang, I. Glesk, R. J. Runser, and P. R. Prucnal, "Fast Tunable Parallel Optical Delay Line, *Optics Express* **8** (11), pp. 559-604 (2001).
- 51 P. V. Studenkov, M. R. Gokhale, J. Wei, W. Lin, I. Glesk, P. R. Prucnal, and S. R. Forrest, "Monolithic, all-optical Mach-Zehnder demultiplexer using an asymmetric twin-waveguide structure," *IEEE Photonics Technology Letters* **13**, 600 (2001).
- 50 I. Glesk, J. Runser, and P. R. Prucnal, "New generation of devices for all-optical communications, *Acta Physica Slovaca* **5** (2), pp. 151-162 (2001).
- 49 R. J. Runser, D. Zhou, B. C. Wang, C. Coldwell, P. Toliver, K-Li Deng, I. Glesk, and P. R. Prucnal, "Interferometric Ultrafast SOA-based Optical Switches: From Devices to Applications," *Optical and Quantum Electronics* **33** (7/10), pp. 841-874 (2001). Special Issue on Components for Ultrafast Communications. Invited.
- 48 K-L. Deng, R. J. Runser, P. Toliver, I. Glesk, and P. R. Prucnal, "A highly scalable, rapidly-reconfigurable, multicasting-capable, 100-Gbit/s photonic switched interconnect based upon OTDM technology," Special Issue on Optical Networks in *Journal of Lightwave Technology* **18** (12) 1892 (2000).
- 47 D. Zhou, B. C. Wang, R. J. Runser, I. Glesk, and P. R. Prucnal, "Perfectly synchronized bit-parallel WDM data transmission over a single optical fiber," *IEEE Photonics Technology Letters* **13** (4) 382 (2000).
- 46 P. Toliver, I. Glesk, and P. R. Prucnal, "All-optical clock and data separation technique for asynchronous packet-switched OTDM networks," *Optical Communications* **173** (1-6), pp. 101-106 (2000).
- 45 I. Glesk, J. Runser, K.-L. Deng, and P. R. Prucnal, "100 Gbit/s Computer Optical Interconnect,"

- 44 K-L. Deng, R. J. Runser, I. Glesk, and P. R. Prucnal, "Demonstration of Multicasting in a 100-Gb/s OTDM Switched Interconnect," *IEEE Photonics Technology Letters* **12** (5), pp. 558-560 (2000).
- 43 P. Toliver, R. J. Runser, I. Glesk, and P. R. Prucnal, "Comparison of three nonlinear interferometric optical switch geometries, *Optics Communications* **175** (4-6), pp. 365-373 (2000).
- 42 P. Toliver, K-L. Deng, I. Glesk, and P. R. Prucnal, "Simultaneous Optical Compression and Decompression of 100 Gb/s OTDM Packets Using a Single TOAD and a Bi-directional Optical Delay Line Lattice," *IEEE Photonics Technology Letters* **11**, 1183 (1999).
- 41 R. J. Runser, K-L. Deng, P. Toliver, I. Glesk, and P. R. Prucnal, "Highly Scalable Router Using a Computer Controlled Time Slot Tuner with Picosecond Resolution," *Electronics Letters* **35**, 1097 (1999).
- 40 I. Glesk, K-L. Deng and P. R. Prucnal, "Devices for Terabit Optical Networks, an Overview and Trends," *Acta Physica Slovaca* **49** (3), pp. 399-408 (1999).
- 39 I. Glesk and P. R. Prucnal, "Ciste optické spracovanie dát v terabitových optických sietach," *Jemná Mechanika a Optika* **43** (11-12), pp. 362-365 (1998).
- 38 K-L. Deng, R. J. Runser, P. Toliver, C. Coldwell, D. Zhou, I. Glesk, and P. R. Prucnal, "Demonstration of a highly scalable 100-Gbs OTDM computer interconnect with rapid inter-channel switching capability," *Electronics Letters* **34**, 2418 (1999).
- 37 P. Toliver, I. Glesk, R. J. Runser, K-L. Deng, K. I. Kang, and P. R. Prucnal, "Ultrafast Multihop Packet-Switched Optical TDM: Components and Systems," *Optical Engineering* **37**, pp. 3187-3195 (1998).
- 36 P. Toliver, I. Glesk, R. J. Runser, K-L. Deng, B. Y. Yu, and P. R. Prucnal, "Routing of 100 Gb/s Words in a Packet-Switched Optical Networking Demonstration (POND) Node," *Journal of Lightwave Technology* **16**, 2169 (1998). Special Issue.
- 35 A. Frankel, T. G. Chang, I. Glesk, and P. R. Prucnal, "Demonstration of Pulse Frequency Division Multiplexing Using Terahertz Optical Asymmetric Demultiplexer," *IEEE Photonics Technology Letters* **10** (9), pp.1322-1324 (1998).
- 34 D. Zhou, K. I. Kang, I. Glesk, and P. R. Prucnal, "An Analysis on Signal-to-Noise Ratio and Design Parameters of a Terahertz Optical Asymmetric Demultiplexer," *Journal of Lightwave Technology* **17**, 298 (1999).
- 33 K-L. Deng, I. Glesk, K. I. Kang, and P. R. Prucnal, "Influence of Crosstalk on the Scalability of Large OTDM Interconnects Using a Novel Rapidly-Reconfigurable, Highly-Scalable Time-Slot Tuner," *IEEE Photonics Technology Letters* **10**, 1039 (1998).
- 32 D. Zhou, P. R. Prucnal, and I. Glesk, "A Widely Tunable Narrow Linewidth Semiconductor Fiber Ring Laser," *IEEE Photonics Technology Letters* **10** (6), pp. 781-783 (1998).
- 31 K-L. Deng, R. Runser, I. Glesk, and P. R. Prucnal, "Single-Shot Optical Sampling Oscilloscope for Ultrafast Optical Waveforms", *IEEE Photonics Technology Letters* **10**, 397 (1998).
- 30 B. Y. Yu, I. Glesk, and P. R. Prucnal, "Analysis of Dual-Receiver Node with High Fault-Tolerance for Ultrafast OTDM Packet-Switched Shuffle Networks," *Journal of Lightwave Technology* **16**, 736 (1998).
- 29 B. Y. Yu, P. Toliver, R. Runser, K-L. Deng, D. Zhou, I. Glesk, and P. R. Prucnal, "Packet-Switched Optical Networks," *IEEE Micro* **18**, 28 (1998).
- 28 I. Glesk, K. I. Kang, and P. R. Prucnal, Ultrafast Photonic Packet Switching with Optical Control, *Optics Express* **1**, 126 (1997)

- 27 K.-L. Deng, K. I. Kang, I. Glesk, and P. R. Prucnal, "A 1024-Channel Fast Tunable Delay Line for Ultrafast All-Optical TDM Networks," *IEEE Photonics Technology Letters* **9**, 1496 (1997).
- 26 B. Y. Yu, R. Runser, P. Toliver, K.-L. Deng, D. Zhou, T. Chang, S. W. Seo, K. I. Kang, I. Glesk, and P. R. Prucnal, "Network Demonstration of 100 Gbit/s Optical Packet Switching with Self-Routing," *Electronics Letters* **33**, 1401 (1997).
- 25 K.-L. Deng, K. I. Kang, I. Glesk, P. R. Prucnal, and S. Shin, "Optical Packet Compressor for Ultra-Fast Packet-Switched Optical Networks," *Electronics Letters* **33**, 1237 (1997).
- 24 I. Glesk and P. R. Prucnal, "TOAD - super rýchly ciste optický prvok pre terabitové optické siete", *Jemná Mechanika a Optika* **42**, 5 (1997).
- 23 I. Glesk, K. I. Kang, and P. R. Prucnal, "Demonstration of Ultrafast All-Optical Packet Routing," *Electronics Letters* **33** (9), pp.794-795 (1997).
22. K.-L. Deng, I. Glesk, K. I. Kang, and P. R. Prucnal, "Unbalanced TOAD for Optical Data and Clock separation in Self-Clocked Transparent OTDM Networks," *IEEE Photonics Technology Letters* **9**, 830 (1997).
- 21 K. I. Kang, K.-L. Deng, S. D. Koehler, I. Glesk, and P. R. Prucnal, "Fabrication of Precision Fiber-Optic Time Delays with in situ Monitoring for subpicosecond Accuracy," *Applied Optics* **36**, 2533 (1997).
- 20 I. Glesk, P. R. Prucnal, A. Strba, V. Mesáros, D. Senderáková, and J. Kaluzay, "Dôležité medzníky v histórii optických komunikácií a perspektívy ich ďalšieho vývoja," *Jemná Mechanika a Optika* **41**, 349 (1996).
- 19 K. I. Kang, K. -L. Deng, S. D. Koehler, I. Glesk, and P. R. Prucnal, "Optical Packaging: In Situ Accurate Optical Fiber Length Adjustment," *ATC/POEM Optical InterConnections* **2**, 4 (1996).
- 18 I. Glesk and P. R. Prucnal, "Ultra-Fast All-Optical Demultiplexer for OTDMA Networks", *Acta Physica Slovaca* **46**, 657 (1996).
- 17 K. I. Kang, T. G. Chang, I. Glesk, P. R. Prucnal, "Comparison of Sagnac and Mach-Zehnder Ultrafast All-Optical Interferometric Switches Based on a Semiconductor Resonant Optical Nonlinearity," *Applied Optics* **35**, 417 (1996).
- 16 K. I. Kang, I. Glesk, P. R. Prucnal, "Ultrafast Optical Time Demultiplexers using Semiconductor Optical Amplifiers," *The International Journal of High Speed Electronics and Systems* **7**, 125 (1996). Invited paper.
- 15 K. I. Kang, I. Glesk, T. G. Chang, P. R. Prucnal, and R. K. Boncek, "Demonstration of All-Optical Mach Zehnder Demultiplexer" – Rpl., *Electronics Letters* **31**, 1494 (1995).
- 14 K. I. Kang, T. G. Chang, I. Glesk, P. R. Prucnal, "Nonlinear Index of Refraction Measurement in Resonant Region using a Fiber Mach-Zehnder Interferometer," *Applied Optics* **35**, 1485 (1996).
- 13 K. I. Kang, T. G. Chang, I. Glesk, P. R. Prucnal, and R. K. Boncek, "Demonstration of Ultrafast, All-optical, Low Control Energy, Single Wavelength, Polarization Independent, Cascadable, and Integratable Switch," *Applied Physics Letters* **67**, 605 (1995).
- 12 K. I. Kang, I. Glesk, T. G. Chang, P. R. Prucnal, and R. K. Boncek, "Demonstration of All-Optical Mach Zehnder Demultiplexer," *Electronics Letters* **31**, 749 (1995).
- 11 M. W. Chbat, C. R. Menyuk, I. Glesk, and P. R. Prucnal, "Interactions of Bound Multiple Solitons in Strongly-Birefringent Fibers," *Optics Letters* **20**, 258 (1995).
- 10 I. Glesk and P. R. Prucnal, "250 Gb/s Self-Clocked Optical TDM with a Polarization-Multiplexed Clock," *Fiber and Integrated Optics* **14**, 71 (1995).
- 9 M. G. Kane, I. Glesk, J. P. Sokoloff, and P. R. Prucnal, "Asymmetric Optical Loop Mirror: Analysis

- of an All-Optical Switch," *Applied Optics* **33**, 6833 (1994).
- 8 I. Glesk, J. P. Sokoloff, and P. R. Prucnal, "All-Optical Address Recognition and Self-Routing in a 250 Gb/s Packet-Switched Network," *Electronics Letters* **30** (16), pp.1322-1323 (1994).
- 7 I. Glesk, J. P. Sokoloff, and P. R. Prucnal, "Demonstration of All-Optical Demultiplexing of TDM Data at 250 Gb/s," *Electronics Letters* **30** (4), 339-341 (1994).
- 6 J. P. Sokoloff, I. Glesk, P. R. Prucnal, and R. K. Boncek, "Performance of 50 Gbit/s Optical Time Domain Multiplexed System Using a Terahertz Optical Asymmetric Demultiplexer," *IEEE Photonics Technology Letters* **6**, 98 (1994).
- 5 J. P. Sokoloff, P. R. Prucnal, I. Glesk, and M. Kane, "A Terahertz Optical Asymmetric Demultiplexer (TOAD)," *IEEE Photonics Technology Letters* **5** (7), pp. 787-790 (1993).
- 4 W. R. Lempert, G. Diskin, V. Kumar, I. Glesk, and R. Miles, "Two Dimensional Imaging of Molecular Hydrogen in H₂/Air Diffusion Flames Using Two-Photon Laser-Induced Florescence," *Optics Letters* **16**, 660 (1991).
- 3 I. Glesk, A. Strba, and V. L. Strizhevski, "Investigation of the Distribution of Particles in Atmosphere by Means of a LIDAR Working at Two Frequencies", *Czechoslovak Journal of Physics* **B38**, 1210 (1988).
- 2 F. Kundracik and I. Glesk, *Acta Physica Universitatis Comenianae* **28**, pp. 191-193 (1988).
- 1 I. Glesk, A. Strba, and A. Wawruch, *Acta Facultatis Rerum Naturalium Universitatis Comenianae - Physica* **XXII**, p. 66 (1980).

Last updated: January 2024

Copyright © 2007 Ivan Glesk