Assoc. Prof. Charis MESARITAKIS

University of the Aegean –School of Engineering

Dept. Information and Communication Systems Engineering

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1. SUMMARY

Assoc. Prof. Charis Mesaritakis acquired his diplom, M.Sc and Ph.D from National and Kapodistrian Univeristy of Athens (Greece). His Ph.D thesis focused on the experimental characterization and numerical modelling of novel regimes of quantum dot mode locked lasers for telecomm and biomedical applications. He has participated as a researcher in multiple FP6-FP7 and Horizon EU projects. He has been awarded a postdoctoral EU Marie-Curie Fellowship, involving high precision laser telemetry in Thales III-V Labs (France); Followed by two competitive national research grants, PROMITHEAS from the J. Latsis foundation and HFRI NEBULA, both focusing on the investigation of photonic neuromorphic technologies. Currently he serves as technical manager for the EU NEoteRIC and for the EU PROMETHEUS Horizon research projects, focusing on photonic neuromorphic and quantum computing paradigms. Since 2019, he is an associate professor at the department of Information and Communication Systems Engineering at the University of the Aegean, splitting his research interest among design/implement photonic neuromorphic systems for high bandwidth applications and photonic physical layer cryptographic modules. He is author and co-author of more than 90 publications in highly cited journals and international conferences focusing on quantum-dot/well laser neuron dynamics, hardware for implementing neuromorphic schemes and physical layer security. He holds two patents, one for photonic-physical unclonable functions modules for implementing physical layer security and a second for a photonic Neuromorphic Optical Processor. He serves as regular reviewer for IEEE, OSA, AIP and Springer Journals.

2. ACADEMIC DEGREES

DOCTORAL DEGREE (PH.D)
National & Kapodistrian University of Athens
Dept. Informatics & Telecommunications

Thesis: "Experimental and Numerical Investigation of Quantum-Dot Mode-Locked Lasers for Telecomm and Biomedical Applications»

MASTER DEGREE (MSC.)
National & Kapodistrian University of Athens
Dept. of Physics and Informatics & Telecommunications

BACHELOR (BS.)
National & Kapodistrian University of Athens
Dept. Informatics & Telecommunications

3. PERSONAL GRANTS & AWARDS

EU-MARIE CURIE GRANT FP7-PEOPLE-IEF **2012 (Paris-France)**
ALCATEL-THALES- III-V Labs
Principal Investigator

NOMOS Project: "Design and realization of semiconductor mode-locked lasers for space-born telemetry and LIDAR applications"

J. LATSIS FOUNDATION (NATIONAL GRANT STUDIES – 2014) **2013 (Athens-Greece)**
National & Kapodistrian University of Athens
Principal Investigator

PROMETHEUS Project: "Investigation of Photonic Reservoir Computing for Telecomm applications"

HFRI – NATIONAL ERC EQUIVALENT POST-DOCTORAL GRANT **2018 (Athens-Greece)**
University of the Aegean
Principal Investigator

NEBULA Project: "Experimental and Numerical Investigation of Quantum-Dot based neuromorphic nodes"

4. PROFESSIONAL POSITIONS

UNIVERSITY OF THE AEGEAN **Samos, Greece**
Dept. Information & Communication Systems Engineering **2019-today**
Associate Professor: Design of Digital Systems and of Integrated Photonic Systems

Technical Manager H2020 NEoteRIC Project (2020-2024)
Technical Manager H2020 PROMETHEUS (2022-2025)
Principal Investigator HFRI NEBULA (2018-2021).

NATIONAL & KAPODISTRIAN UNIVERSITY OF ATHENS **Athens, Greece**
Dept. Informatics & Telecommunications **2006-2018**
Visiting Professor: integrated photonics
Associate/Senior Researcher: 7 FP6-FP7 EU funded research projects on photonics

EULAMBIA ADVANCED TECHNOLOGIES LTD. **Athens, Greece**
2017-2018

Senior Researcher in the R&D department
Chief Technical officer in H2020 research projects (KONFIDO, SMILE)

UNIVERSITY OF WEST ATTICA **Athens, Greece**
Dept. Informatics and Computer Engineering **2015-today**

Adjunct Lecturer: Computer Networks and Electronics
Visiting Professor: Microcontrollers, Next Generation Networks

SCHOOL FOR TELECOMMUNICATION OFFICERS **Athens, Greece**
Hellenic Army Forces **2012-today**
Visiting Professor: Computer Networks and Telecommunications

ALCATEL-THALES III-V LABS **Paris,**
France
2013-2014
IEF Marie-Curie Postdoctoral Fellow: NOMOS project

5. PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

1. A. Bogris, T. Nikas, C. Simos, I. Simos, K. Lentas, N. S. Melis, A. Fichtner, D. Bowden, K. Smolinski, C. Mesaritakis & I. Chochliouros. "Sensitive seismic sensors based on microwave frequency fiber interferometry in commercially deployed cables". **Nature Scientific Reports** 12, 14000 (2022)

2. K. Sozos, A. Bogris, G. Sarantoglou, P. Bienstman, C. Mesaritakis, "High-Speed Photonic Neuromorphic Computing Using Recurrent Optical Spectrum Slicing Neural Networks" 1:(24) doi.org/10.1038/s44172-022-00024-5 **Nature Communication Engineering**, (2022)

3. G. Sarantoglou, A. Bogris, C. Mesaritakis, S. Thodoridis, "Bayesian Photonic Accelarators for Energy Efficient and Noise Robust Neural Processing" **(invited) IEEE Selected Topics in Quantum Electronics**, 10.1109/JSTQE.2022.3183444 (2022)

4. D. Dermanis, A. Bogris, P. Rizomiliotis, C. Mesaritakis, "Photonic Physical Unclonable Function based on an Integrated Neuromorphic schemes" **IEEE Journal of Lightwave Technology** 10.1109/JLT.2022.3200307 (2022)

5. M. Skontranis, G. Sarantoglou, A. Bogris, C. Mesaritakis, "Time-Delayed Reservoir Computing Based on Dual-Waveband Quantum-Dot Spin-Polarized Vertical Cavity Surface-Emitting Laser" Optica **Material Optics Express,** 12(10), 4047-4060 (2022)

6. Y. Hong, S. Deligiannidis, N. Taengnoi, K. R. H. Bottrill, N. K. Thipparapu, Y. Wang, J. K. Sahu, David J. Richardson, C. Mesaritakis, A. Bogris, and P. Petropoulos, "ML-assisted Equalization for 50-Gb/s/ λ O-band CWDM Transmission over 100-km SMF" **IEEE Selected Topics in Quantum Electronics** 10.1109/JSTQE.2022.3155990 (2022).

7. G. Sarantoglou, M. Skontranis, A. Bogris, C. Mesaritakis, "Experimental study of Neuromorphic Node based on a Multi- Waveband Emitting two - section Quantum Dot Laser" **Optica Photonic Research**, Vol. 9, No. 4 pp. B87 doi: 10.1364/PRJ.413371 (2021)

8. M. Skontranis, G. Sarantoglou, S. Deligiannidis, A. Bogris, C. Mesaritakis, "Unsupervised Image Classification Through Time-Multiplexed Photonic Multi-Layer Spiking Convolutional Neural Network" **Appl. Sci. 2021, 11(4)** (2021)

9. K. Sozos, C. Mesaritakis, A. Bogris "Reservoir Computing Based on Mutually Injected Phase Modulated Semiconductor Lasers as a Monolithic Integrated Hardware Accelerator" **IEEE Journal of Quantum Electronics** vol. 57, no. 5, pp. 1-7, Oct. 2021

10. S. Deligiannidis, C. Mesaritakis, A. Bogris, "Performance and Complexity Analysis of bi-directional Recurrent Neural Network Models vs. Volterra Nonlinear Equalizers in Digital Coherent Systems." **IEEE Journal of Lightwave Technology** Vol.39, No.18 pp. 5791 (2021)

11. A. Bogris, C. Mesaritakis, Stavros Deligiannidis, Pu Li "Fabry-Perot Lasers as Enablers for Parallel Reservoir Computing", **IEEE Selected Topics in Quantum Electronics**, Vol. 27, No.2 (2020)

12. C. Mesaritakis, P. Rizomiliotis, M. Akriotou, C. Chaintoutis, A. Fragkos, D. Syvridis "Photonic Pseudo-Random Number Generator for Internet-of-Things Authentication using a Waveguide based Physical Unclonable Function" **Arxiv.org** (2020)

13. S. Deligiannidis, A. Bogris, C. Mesaritakis, Y. Kopsinis, "Compensation of Fiber Nonlinearities in Digital Coherent Systems Leveraging Long Short-Term Memory Neural Networks" **IEEE Journal of Lightwave Technology**, 38(21) 5991-5999 (2020)

14. G. Sarantoglou, M. Skontranis, C. Mesaritakis, "All Optical Integrate and Fire Neuromorphic Node based on Single Section Quantum Dot Laser" **IEEE Selected Topics in Quantum Electronics**, vol. 26, no. 5, pp. 1-10 (2020)

15. C. Mesaritakis, D. Syvridis, "Reservoir Computing based on Transverse Modes in a Single Optical Waveguide" **Optica Optics Letters** 44 (6) 1218-1221 (2019)

16. C. Chaintoutis, M. Akriotou, C. Mesaritakis, I. Komnios, D. Karamitros, A. Fragkos, D. Syvridis, "Optical PUFs as physical root of trust for blockchain-driven applications" **IET Software** IET Software 13.3 (2019): 182-186

17. C. Mesaritakis, M. Akriotou, A. Kapsalis, E. Grivas, C. Chaintoutis, T. Nikas, D. Syvridis, "Physical Unclonable Function based on a Multi-Mode Optical Waveguide" **Nature Scientific Reports** 8, 9653 (2018)

18. C. Mesaritakis, A. Kapsalis, A. Bogris, D. Syvridis "Artificial Neuron based on Quantum Dot Mode Locked Laser" **Nature Scientific Reports**, 6, 39317 (2016)

19. C. Mesaritakis, A. Bogris, A. Kapsalis, D. Syvridis "High-Speed All-Optical Pattern Recognition of Fourier Dispersive Images Through a Photonic Reservoir Computing Subsystem" **Optica, Optics Letters** 40(14) 3416-3419 (2015)
20. C. Weber, L. Dzewietzki, M.Rosseti, T. Xu, P. Bardella, H.Simos, C. Mesaritakis, M. Ruiz, I. Krestnikov, D. Livshits, M. Krakowski, D. Syvridis, I. Montrosset, E. U. Rafailov, W. Elsasser, S. Breuer, "Picosecond pulse amplification up to a peak power of 42 W by a quantum-dot tapered optical amplifier and a mode-locked laser emitting at 1.26 μm" **Optica, Optics Letters**, Vol. 2 pp-395-398 (2015)
21. H. Simos, C. Simos, C. Mesaritakis, D. Syvridis, "Amplitude and Timing Noise in a Noncolliding Passively Mode-Locked Quantum Dot Laser" **IEEE Photon. Technol. Lett**. 27,(5), 506-509 (2015)
22. C. Simos, H. Simos, C. Mesaritakis, A. Kapsalis, "Pulse and noise properties of a two section passively mode-locked quantum dot laser under long delay feedback" **Elsevier Optics Communication** 313, pp.248-255 (2014)
23. C. Mesaritakis, A. Kapsalis, M. Krakowski, I. Krestnikov, D. Syvridis "Tapered InAs/InGaAs Quantum-dot Semiconductor Optical Amplifier Design for Enhanced Gain and Beam Quality" **Optica, Optics Letters,** Vol. 38, No. 14, pp. 2404-2406 (2013)
24. C. Mesaritakis, V. Papataksiarhis, D. Syvridis "Micro Ring Resonators as Building Blocks for an All-Optical High-Speed Reservoir Computing Bit-Pattern Recognition System" **Optica, JOSA-B** Vol. 30 No. 11 pp. 3048-3055 (2013)
25. H. Simos, M. Rossetti, C. Simos, C. Mesaritakis, T. Xu, P. Bardella, I. Montrosset, D. Syvridis, "Numerical analysis of passively mode-locked quantum-dot lasers with absorber section at the low-reflectivity output facet" **IEEE Journal of Quantum Electronics**, Vol.49 No. 1, pp. 3-10, (2013)
26. N. V. Kryzhanovskaya, A. E. Zhukov, A. M. Nadtochy, M. V. Maximov, E. I. Moiseev, M. M. Kulagina, A. V. Savelev, E. M. Arakcheeva, A. A. Lipovskii, F. I. Zubov, A. Kapsalis, C. Mesaritakis, D. Syvridis, A. Mintairov, D. Livshits, "Room-temperature lasing in microring cavities with an InAs/InGaAs quantum-dot active region" **Elsevier Semiconductors** Volume 47, Issue 10, pp 1387-1390 (2013)
27. C. Mesaritakis, C. Simos, H. Simos, I. Krestnikov, D. Syvridis "External Optical Feedback-Induced Wavelength Selection and Q-switching Elimination in an InAs/InGaAs Passively Mode Locked Quantum Dot Laser" **Optica, Journal of Optical Society of America - B** Vol. 29, No. 5, pp. 1071-1077 (2012)
28. C. Mesaritakis, C. Simos, H. Simos, A. Kapsalis, E. Roditi, D. Syvridis, I. Krestnikov, "Effect of the Number of Quantum Dot Layers and Dual State Emission on the Performance of InAs/InGaAs Passively Mode-Locked Lasers", **AIP Applied Physics Letters** Vol.101, 25 pp. 251115 (2012)
29. A. Kapsalis, I. Stamataki, C. Mesaritakis, D. Syvridis, M. Hamacher, H. Heidrich, "Design and Experimental Evaluation of Active-Passive Integrated Micro-Ring Lasers: Noise Properties", **IEEE Journal of Quantum Electronics**, Vol. 48 No. 2 pp. 99-106 (2012)

30. A. Kapsalis, I. Stamataki, C. Mesaritakis, D. Syvridis, M. Hamacher, H. Heidrich, "Design and Experimental Evaluation of Active-Passive Integrated Micro-Ring Lasers: Threshold Current and Spectral Properties", **IEEE Journal of Quantum Electronics**, Vol. 48 No. 2 pp. 99-106 (2012)

31. Y. Ding, R. Aviles-Espinosa, M. A. Cataluna, D. Nikitichev, M. Ruiz, M. Tran, Y. Robert, A. Kapsalis, H. Simos, C. Mesaritakis, T. Xu, P. Bardella, M. Rossetti, I. Krestnikov, D. Livshits, Ivo Montrosset, D. Syvridis, M. Krakowski, P. Loza-Alvarez, and E. Rafailov, "High peak-power picosecond pulse generation at 1.26 μm using a quantum-dot-based external-cavity mode-locked laser and tapered optical amplifier" **Optica, Optics Express** Vol. 20 No. 13, pp. 14308-14320 (2012)

32. Y. Ding, A. Alhazime, D. Nikitichev, K. Fedorova, M. Ruiz, M. Tran, Y. Robert, A. Kapsalis, H. Simos, C. Mesaritakis, T. Xu, P. Bardella, M. Rossetti, I. Krestnikov, D. Livshits, I. Montrosset, D. Syvridis, M. A. Cataluna, M. Krakowski, E. Rafailov, "Tunable master-oscillator power-amplifier based on chirped quantum-dot structures" **IEEE Photon. Technol. Lett**. Vol. 24, No. 20, pp. 1841-1844 (2012)

33. H. Simos, C. Simos, C. Mesaritakis, D. Syvridis, "Two Section Quantum Dot Mode-Locked Lasers under Optical Feedback: Pulse Broadening and Harmonic Operation" **IEEE Journal of Quantum Electronics** vol.48, no.7, pp.872-877, (2012)

34. C. Mesaritakis, A. Argyris, C. Simos, H. Simos, A. Kapsalis, D. Syvridis "Chaotic emission and tunable self-sustained pulsations in a two-section Fabry–Perot quantum dot laser" **AIP: Applied Physics Letters** Vol. 98, 051104 (2011)

35. C. Mesaritakis, C. Simos, H. Simos, D. Syvridis, "Dual ground-state pulse generation from a passively mode-locked InAs/InGaAs quantum dot laser" **AIP: Applied Physics Letters** Vol. 99, 141109 (2011)

36. C. Mesaritakis, A. Argyris, E. Grivas, D. Syvridis "Adaptive Interrogation for Fast Optical Sensing Based on Cascaded Micro-Ring Resonators" **IEEE Sensors Journal**, Vol. 11, No.7 pp.1595-1601 (2011)

37. C. Mesaritakis, C. Simos, H. Simos, S. Mikroulis, I. Krestnikov, D. Syvridis "Pulse Width Narrowing due to Dual Ground State Emission in Quantum Dot Mode Locked Lasers**" AIP: Applied Physics Letters** Vol. 96 May (2010)

38. C. Mesaritakis, C. Simos, H. Simos, S. Mikroulis, I. Krestnikov, E. Roditi, D. Syvridis "Effect of feedback to the Ground and Excited State of a Quantum dot passively mode locked Laser" **AIP: Applied Physics Letters** Vol. 97 August (2010)

39. M. A. Cataluna, D. I. Nikitichev, S. Mikroulis, H. Simos, C. Simos, C. Mesaritakis, D. Syvridis, I. Krestnikov, D. Livshits, and E. U. Rafailov, "Dual-wavelength mode-locked quantum-dot laser, via ground and excited state transitions: experimental and theoretical investigation", **Optica, Optics Express**, vol. 18, pages 12832-12838, (2010)

40. C. Mesaritakis, H. Simos, A. Kapsalis and D. Syvridis, "Optical microring based interrogation method for phase detecting elements", **IEEE Sensors Journal**, vol. 9, December (2009)

41. H. Simos, C. Mesaritakis, D. Alexandropoulos, and D. Syvridis, "Dynamic analysis of crosstalk performance in microring based add/drop filters", **IEEE/OSA Journal of Lightwave Technology**, vol. 27, pages 2027-2034, (2009).
42. H. Simos, C. Mesaritakis, D. Alexandropoulos, and D. Syvridis, "Intra-band Crosstalk Properties of Add/Drop Filters Based on Active Microring Resonators", **IEEE Photon. Technol. Letters**, vol. 19, pages 1649-1651, (2007).

6. CHAPTERS IN SCIENTIFIC BOOKS

1. C. Mesaritakis, D. Syvridis, "Spectral Splitting Effects and Their Influence on the Performance of Quantum Dot Mode-Locked Lasers", **Springer**, "Quantum Dot Devices - Lecture Notes in Nanoscale Science and Technology", Vol. 13 (2012)
2. M. Akriotou, C. Mesaritakis, A. Kapsalis, E. Grivas, C. Chaintoutis, A. Fragkos, D. Syvridis, "Random Number Generation from a Secure Unclonable Hardware Module" **Springer**, Communications in Computer and Information Science Vol. 821, (2018)
3. C. Mesaritakis etal, "Secure Cross-Border Exchange of Health Related Data: The KONFIDO Approach" **Springer,** Internet and Distributed Computing Systems, DOI: 10.1007/978-3-030-34914-1_30 (2019)

7. INTERNATIONAL SCIENTIFIC BOOKS

A. Bogris, C. Mesaritakis, "Neuromorphic Photonic Engineering: An Application Oriented Approach", **CRC Taylor and Francis Press** in preparation (anticipated date November **2022**)

8. PATENT PORTFOLIO

1. C. Mesaritakis, D. Syvridis " Photonic Physical Unclonable Function based on Multi-Mode Optical Waveguides" **GR patent** submitted on 26/7/2017 **Granted Ref. Number: 2017- 02623**

2. C. Mesaritakis, D. Syvridis " Photonic Physical Unclonable Function based on Multi-Mode Optical Waveguides" **PTC patent** submitted on 24/7/2018 **Ref. Number: PCT/IB2018/055546**

3. C. Mesaritakis, A. Bogris, P. Bienstman, "Photonic Integrated device for Signal Processing" Ref. Number **EPO/PTC Ref. Number: EP21195873.1**

9. PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL CONFERENCES

1. C. Mesaritakis, G. Sarantoglou, A. Bogris "Bayesian Training in Reconfigurable Photonic Neuromorphic Meshes", **(invited) IEEE Workshop on Complexity in Engineering** (COMPENG), Florence-Italy (2022)

2. M. Skontranis, G. Sarantoglou, A. Bogris, C. Mesaritakis "Spectro-temporally Multiplexed Reservoir Computing Based on a Multimode Fabry Perot Laser" **ECOC Basel** – Switzerland 2022

3. A. Bogris, K Sozos, S. Deligiannidis, G. Sarantoglou, C. Mesaritakis, "Machine Learning and Neuromorphic Computing Approaches for the mitigation of transmission impairments in high baud rate transmission systems," **ECOC 2022** (Invited)

4. G. Sarantoglou, K. Sozos, T. Kamalakis, C. Mesaritakis, A. Bogris, "Experimental demonstration of an extreme learning machine based on Fabry Perot lasers for parallel neuromorphic processing" **OFC 2022**, San Francisco USA

5. A. Tsirigotis, I. Tsilikas, K. Sozos, A. Bogris, C. Mesaritakis "Filter-Based Photonic Reservoir Computing as a key-enabling platform for all-optical high-speed processing of time-stretched images and telecomm data" (**invited**) **SPIE Photonics West**, 120190G, doi.org/10.1117/12.2607438, AI and Optical Data Sciences III, San Francisco USA 24-26 February 2022.

6. K. Sozos, A. Bogris, P. Bienstman, C. Mesaritakis, "Photonic Reservoir Computing based on Optical Filters in a Loop as a High Performance and Low-Power Consumption Equalizer for 100 Gbaud Direct Detection Systems" **ECOC, Bordeaux France 2021**

7. C. Mesaritakis, Adonis Bogris "Neuromorphic Schemes for Next-Generation Telecommunication and Security Applications" **(invited) ECOC 2021, Bordeaux France** 2021

8. A. Bogris, K. Sozos, A. Tsirigotis, C. Mesaritakis, "Neuromorphic Integrated Photonics as Hardware Accelerators for Ultra-high Speed Telecom and Imaging Applications" **Photonics in Switching and Computing, OSA Virtual Conference (invited)** (2021)

9. M. Skontranis, G. Sarantoglou, A. Bogris, C. Mesaritakis, "Photonic Spiking Convolutional Neural Networks for High-Speed Image Processing" **(Invited) IEEE Summer Topical Meetings 2021** 19-21 July Virtual Conference (2021)

10. C. Mesaritakis, K. Sozos, D. Dermanis, A. Bogris, "Spatial Photonic Reservoir Computing based on Non-Linear Phase-to-Amplitude Conversion in Micro-Ring Resonators" **OFC USA 2021**

11. K. Sozos, C. Mesaritakis, A. Bogris, "Reservoir Computing based on Mutually Injected Phase Modulated Lasers: A monolithic integration approach suitable for short-reach communication systems", **OFC USA 2021**

12. Y. Hong; S. Deligiannidis; N. Taengnoi; K. Bottrill; N. Thipparapu; Y. Wang; J. Sahu; D. Richardson; C. Mesaritakis; A. Bogris; P. Petropoulos, «Performance-enhanced Amplified O-band WDM Transmission using Machine Learning based Equalization» **CLEO** San Hose-USA (2021),

13. G. Sarantoglou, M. Skontranis, A. Bogris, C. Mesaritakis, "Resonate and Fire Neuromorphic Node based on two - section Quantum Dot Laser with multi-waveband dynamics" **ECOC-CLEO**, Brussels (2020)

14. Stavros Deligiannidis, Charis Mesaritakis, Adonis Bogris, "Performance and Complexity Evaluation of Recurrent Neural Network Models for Fibre Nonlinear Equalization in Digital Coherent Systems" **ECOC-CLEO**, Brussels (2020)

15. C. Mesaritakis, M. Skontranis, G. Sarantoglou, A. Bogris, "Micro-Ring-Resonator Based Passive Photonic Spike-Time- Dependent-Plasticity Scheme for Unsupervised Learning in Optical Neural Networks" **OFC USA** – San Diego, March (2020)

16. G. Sarantoglou, M. Skontranis, A. Bogris, C. Mesaritakis, "Temporal Resolution Enhancement in Quantum-Dot Laser Neurons due to Ground State Quenching Effects" **OFC USA** – San Diego, March (2020)

17. C. Mesaritakis, "Photonic Reservoir Computing based on the Random-Interaction of Transverse Optical Modes in Large-Cross Section Waveguides" **CLEO/EQEC Europe**, Munich-Germany (2019)

18. M. Skontranis, G. Sarantoglou, C. Mesaritakis, "Inhibitory Integrate and Fire Neuron based on Quantum-Dot Intra-Band Transitions in a Semiconductor Laser" **CLEO/EQEC Europe**, Munich-Germany (2019)

19. M. Skontranis, G. Sarantoglou, C. Mesaritakis, "All-optical Inhibitory Integrate and Fire Neuron based on a Single-Section Quantum-Dot Semiconductor Laser" **CLEO USA**, San-Diego California USA (2019)

20. C. Mesaritakis, M. Akriotou, D. Syvridis, "Laser Induced Speckle as a Foundation for Physical Security and Optical Computing" **IEEE PSC2018** Photonics in Switching and Computing, Limassol Cyprus (2018)

21. D. Syvridis, C. Mesaritakis, "Quantum-Dot Laser Assisted Spiking Neural Networks" **IEEE International Conference in Laser Optics (ICLO)**, - Invited – St. Petersburg Russia (2018).

22. C. Mesaritakis, M. Akriotou, A. Kapsalis, E. Grivas, C. Chaintoutis, A. Fragkos, D. Syvridis, "Random Number Generation from a Secure Unclonable Hardware Module" **ISCIS Security** Workshop, 26-27th February, Imperial College London (2018)

23. J. Rasmussen, P. Natsiavas, K. Votis, K. Moschou, P. Campegiani, L. Coppolino, I. Cano, D. Marí, G. Faiella, O. Stan, O. Abdelrahman, M. Nalin, I. Baroni, M. Voss-Knude, V.A. Vella, E. Grivas, C. Mesaritakis, J. Dumortier, J. Petersen, D. Tzovaras, L. Romano, I. Komnios and V. Koutkias, "Gap Analysis for Information Security in Interoperable Solutions at a Systemic Level: The KONFIDO Approach", in IFMBE Proceedings of the Int. Conf. on Biomedical and Health Informatics, Thessaloniki, Greece, November 18-21, 2017, **Springer**-Verlag Berlin Heidelberg, 2017 (in press)

24. D. Syvridis, C. Mesaritakis, "Neuromorphic Photonics based on Quantum-Dot Devices", **Control of Self-Organizing Nonlinear Systems**, Wittenberg-Germany - Invited - (2017)

25. C. Mesaritakis, "All-Optical Excitability of an Inhibitory Neuron based on Two-Section InAs/InGaAs Quantum Dot Mode-Locked Laser" **CLEO Europe/EQEC 2017** Munich-Germany (2017)

26. C. Mesaritakis, M. Akriotou, E. Grivas, D. Syvridis "Cryptographic Key Generation from a Photonic Physical Unclonable Function based on High-Order Transverse Modes" **KES-IIMSS** Algarve-Portugal (2017).

27. C. Mesaritakis, A. Kapsalis, M. Akriotou, D. Syvridis "Physical Unclonable Functions as Key Generator for Cryptographic Applications", **3rd International Conference on Cyber Security** CryCybIW Athens-Greece (2016)

28. C. Mesaritakis, A. Kapsalis, D. Syvridis "All-Optical Reservoir Computing system based on InGaAsP Ring Resonators for High-Speed Identification and Optical Routing in Optical Networks" **SPIE Photonics West**, San Francisco USA, (2015)

29. A. Kapsalis, C. Mesaritakis, D. Syvridis "Converting mid-infrared signals to near-infrared through optomechanical transduction" **SPIE Photonics West**, San Francisco USA, (2015)

30. C. Mesaritakis, A. Bogris, D. Syvridis, "All optical Dual-Wavelength Switching and Injection Locking of InAs/InGaAs Passively Mode-Locked Quantum Dot Fabry-Perot Lasers" **CLEO CB-P** Munich Germany (2015)

31. C. Mesaritakis, D. Syvridis "Optical Pattern Recognition System based on Reservoir Computing Scheme Using Micro-Ring Resonators as Building Blocks" **EUROPTRODE XII**, Athens Greece April (2014)

32. C. Mesaritakis, A. Kapsalis, D. Syvridis, "Silicon-on-Insulator Microring Resonator All-Optical Reservoir Computing Scheme for High-Speed Applications" Conference: **IEEE International Conference on group IV Photonics**, At Cité Internationale Universitaire de Paris, Paris France (2014)

33. C. Mesaritakis, A. Kapsalis, C. Simos, H. Simos, M. Krakowski, and D. Syvridis "Optimized InAs/AlGaAs Quantum Dot Semicon- ductor Optical Amplifier Tapered Geometry For Enhanced Beam Quality and Optical Gain" **CLEO** 2013 May – Munich Germany

34. L. Drzewietzki, S. Breuer, M. Rossetti, T. Xu, P. Bardella, H. Simos, C. Mesaritakis, M. Ruiz, I. Krestnikov, D. Livshits, M. Krakowski, D. Syvridis, I. Montrosset, E. Rafailov, and W. Elsa¨ßer, "Picosecond pulse generation with 34W peak power using a monolithic quantum-dot tapered mode-locked laser and tapered optical amplifier" **CLEO** 2013 May – Munich Germany

35. H. Simos, C. Simos, C. Mesaritakis, D. Syvridis "Numerical Investigation of Timing Jitter in Passively Mode Locked Quantum Dot Lasers with Anti-Colliding Design" **IS-PALD**, Paris-France (2013)

36. C. Simos, H. Simos, C. Mesaritakis, D. Syvridis "Two Section Quantum Dot Mode Locked Lasers under Long Optical Feedback: Pulse Noise and Jitter Dynamics" **IS-PALD,** Paris – France (2013)

37. Y. Ding, M. A. Cataluna, D. Nikitichev, M. Ruiz, M. Tran, Y. Robert, A. Kapsalis, H. Simos, C. Mesaritakis, T. Xu, P. Bardella, M. Rossetti, I. Krestnikov, D. Livshits, I. Montrosset, D. Syvridis, M. Krakowski, E. Rafailov "Tunable Master-Oscillator Power Amplifier Using All Chirped Quantum-Dot Structures" **CLEO** 2012 San Jose, USA

38. Y. Ding, M. A. Cataluna, D. Nikitichev, M. Ruiz, M. Tran, Y. Robert, A. Kapsalis, H. Simos, C. Mesaritakis, T. Xu, P. Bardella, M. Rossetti, I. Krestnikov, D. Livshits, I. Montrosset, D. Syvridis, M. Krakowski, E. Rafailov "30-W Peak Power Generated from All-quantum-dot Master-oscillator Power-amplifier System for Nonlinear Bio-imaging Applications" **CLEO** 2012 San Jose, USA

39. A. E. Zhukov, N. V. Kryzhanovskaya, A. V. Savelyev, A. M. Nadtochiy, E. M. Arakcheeva, F. I. Zubov, V. V. Korenev, M. V. Maximov, Y. M. Shernyakov, M. M. Kulagina, I. A. Slovinskiy, D. A. Livshits, A. Kapsalis, C. Mesaritakis, D. Syvridis, A. M. Mintairov, "Quantum dot lasers and relevant nanoheterostructures" **SPIE, Semiconductor Lasers and Applications** V, Beijing, China, November 05, (2012)

40. A. E. Zhukov, N. V. Kryzhanovskaya, A. V. Savelyev, A. M. Nadtochiy, E. M. Arakcheeva, F. I. Zubov, V. V. Korenev, M. V. Maximov, Y. M. Shernyakov, M. M. Kulagina, I. A. Slovinskiy, D. A. Livshits, A. Kapsalis, C. Mesaritakis, D. Syvridis, A. M. Mintairov, "Quantum dot lasers and relevant nanoheterostructures" **SPIE, Progress in Biophotonic**s, Beijing, China, November 05, (2012)

41. A. Kapsalis, H. Simos, C. Mesaritakis and D. Syvridis, "Optical Microring resonators for telecom sensing and metrology applications: Theory, Design and Experimental Results**", 5th International Conference on Micro-Nanoelectronics, Nanotechnologies and MEMS** (Micro & Nano 2012), Heraklion, Crete, October (2012).

42. A. Kapsalis, C. Mesaritakis and D. Syvridis "Active-Passive Integrated Microring Lasers", **ECLW** September, Lausanne Switzerland. (2011)

43. C. Mesaritakis, H. Simos, A. Kapsalis, D. Syvridis " Micro Ring Biochemical Sensor Based on Fano Resonances and Nanoslot Waveguides" **EOS annual meeting TOM1 Biophotonics** Paris France September (2008).

10. INVITED TALKS IN INTERNATIONAL WORKSHOPS

1. C. Mesaritakis "Spatial reservoir computing based on a reconfigurable neuromorphic platform for high speed signal processing" **1st Workshop on Neuromoprhic Photonics**, Thessaloniki-Greece 2021

2. C. Mesaritakis "Neuromorphic Photonic Circuits as an enabling technology for near future high-speed optical links" **JWOC 2021**, **Paris-SanClay France** (2021)

3. C. Mesaritakis "Passive Photonic Components as Building Blocks for Ultra-Fast Reservoir Computing and as Photonic Spike Dependent Plasticity Enabling Structures" **ERC International Workshop – Invited -** Photonic Reservoir Computing and Information Processing in Complex Networks, **Trento-Italy** (2019)

11. PH.D STUDENTS

Main Supervisor

1. George Sarantoglou (University of the Aegean) thesis title "Photonic Components for Neuromorphic Engineering"
2. Menelaos Skontranis (University of the Aegean) thesis title "Photonic Reservoir Computing for bio-inspired data processing"
3. Dermanis Dimitrios (University of the Aegean) thesis title "Neuromorphic Systems for cyber-physical security"
4. Aris Tsirigotis (University of the Aegean) thesis title "Neuromorphic photonic schemes for biomedical analysis"

Co-Supervisor

1. Kostas Sozos (University of West Attica)
2. Stavros Deligiannidis (University of West Attica)
3. Ioannis Tsilikas (National Technical University of Athens)
4. Panagiotis Georgiou (University of Patras)

12. INTERNATIONAL/NATIONAL RESEARCH PROJECTS

1. **EU Horizon Europe PROMETHEUS** (Technical Manager – University of the Aegean)
2. **EU H2020 NEoteRIC** (Technical Manager – University of the Aegean)
3. **National GSRT – SAFE-IT** (Senior Researcher – University of the Aegean)
4. **National HFRI – NOOK** (Senior Researcher – University of West Attica)
5. **National HFRI – NEBULA** (Principal Investigator – National and Kapodistrian University of Athens)
6. **EU H2020 KONFIDO** (WP Leader – EULAMBIA ltd.)
7. **EU H2020 SMILE** (Senior Researcher – EULAMBIA Ltd.)
8. **EU IEF MARIE CURIE** Fellowship NOMOS (Principal Investigator – Thales -III/V Labs)
9. **National J. Latsis Foundation** Studies PROMITHEAS (Principal Investigator - National and Kapodistrian University of Athens)
10. **EU FP7 DOGGIES** (Senior Researcher– National and Kapodistrian University of Athens)
11. **EU FP7 CLARITY** (Associate Researcher– National and Kapodistrian University of Athens)
12. **EU FP6 IP FAST DOT** (Associate Researcher – National and Kapodistrian University of Athens)
13. **EU FP6 PICASSSO** (Associate Researcher – National and Kapodistrian University of Athens)
14. **EU FP6 WAPITI** (Associate Researcher – National and Kapodistrian University of Athens)