

CURRICULUM VITAE

Personal Data

Surname: ESLAMI

Name: MANSOUR

Date of Birth: 21/09/1985

Nationality: IRANIAN

Home: No. 9 – Yas Alley, Sabalan Street, Alborz Quarter, Dampezhki Ave., Tabriz, Iran.

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Education & Research

INSF Post-Doctoral Fellow at Computational Photonics Group (From June 2017)

Research Institute for Applied Physics & Astronomy, University of Tabriz, Tabriz, Iran

Research Assistant at Computational Photonics Group (January 2015 to January 2017)

Research Institute for Applied Physics & Astronomy, University of Tabriz, Tabriz, Iran

Research Associate (From January to July 2014)

Computational Nonlinear and Quantum Optics Group, University of Strathclyde, Glasgow, United Kingdom

Evaluated in the Research Excellence Framework 2008-2014 to be the top in the UK

PhD in Photonics

Photonics Group, Research Institute for Applied Physics & Astronomy, University of Tabriz, Tabriz, Iran
From September 2011 to September 2014, GPA: 3.5/4.0

Thesis title: "Atomic Coherence and Localized Structures"

Supervisors: Dr. Reza Kheradmand (University of Tabriz-Iran) & Prof. Gian-Luca Oppo (University of Strathclyde-U.K.)

Master of Science in Photonics

Photonics Group, Research Institute for Applied Physics & Astronomy, University of Tabriz, Tabriz, Iran
From 2008 to December 2010, GPA: 3.3/4.0

Thesis title: "Coherent and Incoherent Switching of Cavity Solitons in Semiconductor Microresonators above Laser Threshold"

Supervisors: Dr. Kheradmand & Dr. Asgari

Bachelor of Science in Solid State Physics

Solid State Group, Physics Department, Payam-e-Noor University of Tabriz, Tabriz, Iran.
From 2003 to 2008

Publications (latest comes first)

Authors: M. Eslami, G.-L. Oppo

Title: Eckhaus Instability for Dissipative solitons: an irreversible process

Journal: To be submitted, (2017).

Authors: M. Eslami, S. H. Daryan, R. Kheradmand, G.-L. Oppo

Title: Transverse EIT in a cavity: Dissipative solitons to order

Journal: To be submitted, (2017).

Authors: M. Eslami, G.-L. Oppo

Title: Complex structures in media displaying electromagnetically induced transparency: control mechanism

Journal: To be submitted, (2017).

Authors: M. Eslami, M. Khanmohammadi, R. Kheradmand, G.-L. Oppo

Title: Optical turbulence and transverse rogue waves in a cavity with triple quantum dot molecules

Journal: to appear in *Phys. Rev. A* (2017).

Authors: M. Eslami, S. Z. Gandomani, F. Prati, H. Tajalli, R. Kheradmand

Title: Ultra low-energy switch based on a cavity soliton laser with pump modulation

Journal: *Journal of Optics* 19, 015502 (2016).

Authors: M. Eslami, R. Kheradmand, P. Bahari, H. Tajalli

Title: Twin laser cavity solitons in a VCSEL with saturable absorber

Journal: *Eur. Phys. J. D*, 69, 222 (2015).

Authors: H. Ghanbari, S. Ahmadi, M. Eslami

Title: High quality computational ghost imaging using multi-fluorescent screen

Journal: *J. Opt. Soc. Am. A*, Vol. 32, 323-328, (2015).

Authors: M. Eslami, R. Kheradmand, D. McArthur, G.-L. Oppo

Title: Complex structures in media displaying electromagnetically induced transparency: pattern multi-stability and competition

Journal: *Phys. Rev. A*, 90, 023840 (2014).

Authors: M. Eslami, R. Kheradmand, F. Prati

Title: All-optical tunable delay-line memory based on a semiconductor cavity-soliton laser

Journal: *Phys. Rev. A* 89, 013818 (2014).

Authors: M. Eslami, R. Kheradmand

Title: High Bit-Rate Cavity Soliton Based Differential Phase-Shift Keying Demodulator

Journal: *Journal of Modern Optics* 61, 116–121, (2014).

Authors: M. Eslami, R. Kheradmand, Gh. Hashemvand

Title: The Effect of Nonlinear Gain on the Characteristics of an Optically Injected VCSEL and Cavity Solitons

Journal: *Optical and Quantum Electronics* 46, 319-329, (2014).

Authors: M. Eslami, R. Kheradmand, K. M. Aghdami

Title: Complex Behavior of VCSELs with Optical Injection

Journal: *Phys. Scr.* T157, 014038, (2013).

Authors: S. Moshki, K. M. Aghdami, R. Kheradmand, M. Eslami

Title: Investigation of Bistability and its stability in Coupled Cavities Array with Saturable Absorber

Journal: *Phys. Scr.* T157, 014037, (2013).

Authors: M. Eslami, R. Kheradmand

Title: All Optical Logic Gates Based on Cavity Solitons with Nonlinear Gain

Journal: *Optical Review* 19, 242–246, (2012).

Authors: R. Kheradmand, M. Eslami

Title: Switching On/Off of Cavity Solitons in Semiconductor Microresonators via Carrier Injection above Laser Threshold

Journal: *Japanese Journal of Applied Physics*, 50, 05FG07, (2011).

Authors: R. Kheradmand, M. Eslami

Title: Cavity Soliton Mobility in Semiconductor Microresonators above Laser Threshold

Journal: *Journal of Physics*, 248, 012050, (2010).

Iranian Conference Journals:

Authors: M. Khanmohammadi, M. Eslami, R. Kheradmand

Title: Multi-Stability and Transverse Instabilities in Quantum Dot Molecules under TIT

Journal: *The 22th Iranian Conference on Optics and Photonics, Yazd*, (2016).

Authors: M. Varzkari, M. Eslami, R. Kheradmand

Title: Instability Balloons for Wave Numbers of Spatial Structures Forming in an EIT Medium

Journal: *The 22th Iranian Conference on Optics and Photonics, Yazd*, (2016).

Authors: S. Z. Gandomani, M. Eslami, R. Kheradmand

Title: The effect of pump current modulation on the mobility of Laser Cavity Solitons

Journal: *The 22th Iranian Conference on Optics and Photonics, Yazd*, (2016).

Authors: P. Bahari, M. Eslami, R. Kheradmand

Title: Effects of carrier lifetimes on cavity solitons in soliton lasers

Journal: *The 21th Iranian Conference on Optics and Photonics, Tehran*, (2015).

Authors: P. Bahari, M. Eslami, R. Kheradmand

Title: Paired cavity solitons in soliton lasers

Journal: *The 21th Iranian Conference on Optics and Photonics, Tehran, (2015).*

Authors: S. Hashemi, M. Eslami, R. Kheradmand

Title: Transition from Positive to Negative Hexagons in EIT Media

Journal: *The 21th Iranian Conference on Optics and Photonics, Tehran, (2015).*

Authors: S. Hashemi, M. Eslami, R. Kheradmand

Title: Switching of Cavity Solitons in an EIT Medium

Journal: *The Second Iranian Conference on Engineering Electromagnetics, Tehran, (2014).*

Authors: S. Hashemi, M. Eslami, R. Kheradmand

Title: Simulation of Localized Structures in Electromagnetically Induced Transparency Medium

Journal: *4nd Iranian Conference on Optics and Laser Engineering, Isfahan, (2013).*

Authors: M. Eslami, Gh. Hashemvand, R. Kheradmand

Title: Enhanced Relaxation Oscillations in a Semiconductor Laser with Optical Injection

Journal: *19th Iranian Conference on Optics and Photonics, Zahedan, (2013).*

Authors: S. Hashemi, M. Eslami, R. Kheradmand

Title: Investigation of Pattern-Forming Instabilities in EIT Media

Journal: *19th Iranian Conference on Optics and Photonics, Zahedan, (2013).*

Authors: E. Taghavi, M. Eslami, R. Kheradmand

Title: Comparison of Coherent Switching of Cavity Solitons in Semiconductor Microresonators in 10 & 20 Percent above Threshold

Journal: *18th Iranian Conference on Optics and Photonics, Tabriz, (2012).*

Authors: R. Kheradmand, M. Eslami

Title: Switching of Cavity Solitons Using Carriers in Semiconductor Microresonators above Laser Threshold

Journal: *2nd Iranian Conference on Optics and Laser Engineering, Isfahan, (2011).*

Authors: R. Kheradmand, M. Eslami

Title: Switching of Cavity Solitons in semiconductor Microresonators

Journal: *Physics Society of Iran, (2010).*

International Conference Presentations (latest comes first)

Authors: M. Eslami, N. Helali, R. Kheradmand, F. Prati

Title: Twin Laser Cavity Solitons: Theory and Applications

Type: Invited Talk

Conference: *2nd International Conference on Physics*

Place & Date: Brussels, Belgium 2017

Authors: M. Eslami, R. Kheradmand, K. M. Aghdami
Title: Complex behavior of VCSELs with Optical Injection
Type: Oral
Conference: *3rd International Conference on Optical Materials*
Place & Date: Belgrade-Serbia 2012

Authors: R. Kheradmand, K. M. Aghdami, S. Moshki, M. Eslami
Title: Investigation of Bistability and its stability in Coupled Cavities Array with Saturable Absorber
Type: Poster
Conference: *3rd International Conference on Optical Materials*
Place & Date: Belgrade-Serbia 2012

Authors: M. Eslami, R. Kheradmand
Title: Switching of Cavity Solitons in Semiconductor Microresonators above Laser Threshold
Type: Oral
Conference: *Baku-2010 International Physics Conference*
Place & Date: Baku-Azerbaijan 2010

Authors: R. Kheradmand, M. Eslami
Title: Cavity Soliton Mobility in Semiconductor Microresonators
Type: Oral
Conference: *International Conference on Theoretical Physics (Dubna-Nano 2010)*
Place & Date: Dubna-Russia 2010

Authors: M. Eslami, R. Kheradmand
Title: Incoherent Switching On/Off of Cavity Solitons in Semiconductor Microresonators
Type: Poster
Conference: *17th International Conference on Ternary and Multinary Compounds (ICTMC-17)*
Place & Date: Baku-Azerbaijan 2010

Speeches

Presenter: M. Eslami
Title: Complexity Science: Optically Injected VCSELs
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2013)

Presenter: M. Eslami
Title: Squeezed States in Quantum Optics
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2012)
Presenter: M. Eslami
Title: Optical Waveguides in Semiconductor Lasers
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2012)

Presenter: M. Eslami
Title: Optical Parametric Oscillators
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2011)

Presenter: M. Eslami
Title: Controlling Density of States of Radiation Field by Optical Cavities
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2011)

Presenter: M. Eslami
Title: Logical Operations Using Cavity Solitons
Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2010)

Presenter: M. Eslami

Title: Photonic Crystal Cavities

Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2009)

Presenter: M. Eslami

Title: Quantum Imaging

Place: Research Institute for Applied Physics & Astronomy, University of Tabriz (2009)

Computer skills

- Programming: Fortran, IDL
- Development: MATLAB
- Other software: Origin, Maple, Latex

Lingual proficiency

IELTS: Average Band Score 7.0

| Listening | Reading | Writing | Speaking |
|-----------|---------|---------|----------|
| 7.5 | 7.5 | 7.0 | 6.5 |

Funded Research Projects:

| Title | University | Year |
|--|--|-----------|
| Optical switches based on twin/single cavity solitons in semiconductor lasers and enhancements in the performance of all-optical devices | Photonics Excellence, University of Tabriz | 2015-2016 |
| Resonance excitation and switching energy reduction in all-optical switches based on Laser Cavity Solitons | Photonics Excellence, University of Tabriz | 2016-2017 |
| Triggering and suppression of transverse rogue waves in a cavity filled with triple quantum dot molecules | Photonics Excellence, University of Tabriz | 2016-2017 |

Thesis Supervision

| Title | Degree Course | University | Name |
|---|---------------------------------------|---|--------------------|
| Nonlinear Dynamics of Semiconductor Maxwell-Bloch Equations above Laser Threshold | M.Sc in Photonics Sep2011-Feb 2013 | Kerman Graduate University of Technology | Ghafour Hashemvand |
| Exploring EIT Media for Localized Structures | M.Sc in Photonics Sep2012-Jan2014 | Research Institute for Applied Physics-University of Tabriz | Sepideh Hashemi |

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|---|--|--|--------------------------|
| Studying the Ratio of Photon/Carrier Lifetimes in a Semiconductor Laser with Saturable Absorber | M.Sc in Photonics Sep2012-Feb2014 | Faculty of Science- University of Sistan | Parvin Bahari |
| Studying the Behavior of an Optically Injected VCSEL in Presence of Multiple Bifurcation Points | M.Sc in Photonics Sep2013- Aug 2015 | Research Institute for Applied Physics- University of Tabriz | Arghavan Negintaji |
| Life Time Ratios, Bifurcations and Relaxation Oscillations in Lasers with Saturable Absorber | M.Sc in Photonics Sep2013-Aug 2014 | Research Institute for Applied Physics- University of Tabriz | Ehsan Naghizade |
| Investigation of systems with enhanced atomic coherence | M.Sc in Photonics Sep2014-Feb2016 | Research Institute for Applied Physics- University of Tabriz | Maryam Varzkari |
| Modulation response and carrier lifetimes in VCSEL with saturable absorber | M.Sc in Photonics Sep2014-Feb2016 | Research Institute for Applied Physics- University of Tabriz | Sahar Zamani |
| Interactions and Collisions of Twin Laser Cavity Solitons | M.Sc in Photonics Sep2015-Now | Research Institute for Applied Physics- University of Tabriz | Neda Helali |
| Transverse Optics of triple quantum dot molecules under TIT | M.Sc in Photonics Sep2015-Now | Research Institute for Applied Physics- University of Tabriz | Monireh Khanmohammadi |

Books

| Title | Type | Publisher & Year |
|--------------------------------------|---------------------------|----------------------------|
| Einstein, Physics and Reality | Translation and additions | Shayesteh – 2008 |
| Problem Analyzing in Basic Mechanics | Compilation | Shahrab – Tehran 2006 |
| English for Physics Students | Compilation | Forouzesh – 2007 |
| English for Computer Engineers | Compilation/Translation | Payame Daneshgahi- Isfahan |
| English for Industrial Engineers | Compilation/Translation | Payame Daneshgahi- Isfahan |

Member of:

- Elite Students Group of University of Tabriz
- Young Researchers and Elite Club, Azad University of Tabriz
- Physics Society of Iran
- Optics and Photonics Society of Iran

Active Reviewer for International Journals:

- Optics Letters
- Optics Express
- Applied Optics
- JOSA A/B

International Collaborations & Research Interests

* Prof. Gian-Luca Oppo

CNQO group, University of Strathclyde, Glasgow, U.K.

-investigation of irreversibility of instabilities affecting dissipative solitons

-infinitely long term coherent storage of information

-controlling chaotic behaviors, and chimera states

-multi-stabilities and instabilities, bifurcations, complexities of the phase space and rogue waves in QDM cavity with elevated material coherence

A brief highlight can be found at:

<http://cnqo.phys.strath.ac.uk/research/computation-nonlinear-optics/eit/>

*Prof. Franco Prati

Department of Science and High Technology, the University of Insubria, Como, Italy

-laser cavity solitons in semiconductor lasers with saturable absorber

-rotating twin laser cavity solitons

-optical micro-motors (with the aim of manipulating micro-fluids ...)

My research is currently focused on:

- Nonlinear Dynamics and Chaos in Optical Systems
- Complex Spatial Structures in Coherent Media
- Cavity Solitons and Optical Patterns in Semiconductor Lasers

References

- Dr. Reza Kheradmand
Associate professor of Laser Physics, University of Tabriz, Iran
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- Prof. Gian-Luca Oppo
Chair of Natural Philosophy, Computational and Nonlinear Physics, University of Strathclyde,
Glasgow, U.K.
g.l.oppo@strath.ac.uk
- Prof. Franco Prati
Full professor of Laser Physics, University of Insubria, Como, Italy
franco.prati@uninsubria.it
- Prof. Asghar Asgari
Head of Research Institute for Applied Physics and Astronomy, University of Tabriz, Iran
asgari@tabrizu.ac.ir
- Dr. Sohrab Ahmadi Kandjani
Associate professor of Organic Photonics, University of Tabriz, Iran
s_ahmadi@tabrizu.ac.ir
- Prof. Mostafa Sahraee
Full professor of Quantum Optics, University of Tabriz, Iran
sahraei@tabrizu.ac.ir