

Yasa Eksioğlu ÖZOK

CONTACT INFORMATION

Dept. of Electrical and
Electronics Engineering,
Istanbul Kemerburgaz
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ACADEMIC EXPERIENCE

Istanbul Kemerburgaz University Dept. of Electrical and Electronics Engineering,
Istanbul, Turkey
Asst. Prof. **September 2015-**

**École Polytechnique Fédérale de Lausanne, School of Engineering, Interschool Institute
of Bioengineering, Bionanophotonics Systems Laboratory,** Lausanne, Switzerland, (EPFL
STI IBI-STI BIOS)
Visiting Postdoctoral Researcher **March 2014 - September 2014**

Topic: Nanofabrication and design of plasmonic nanostructures (or nanoantennas) for biological applications.

Brno University of Technology, Brno, Czech Republic
Postdoctoral Researcher **2013 - 2015**

Topic: Micro and nano-optic waveguide structures - design and simulation
Excellent young researcher at BUT no. CZ.1.07/2.3.00/30.0039 of Brno University of Technology

Koç University, Istanbul, Turkey
Postdoctoral Researcher **2011 - 2013**

Topic: Physics and Applications of dielectric waveguide surface plasmon Josephson junctions: From classical to Quantum plasmonics, supported by Science and Technology Research Council of Turkey, TÜBİTAK

INFN research unit in Pisa, Scuola Normale Superiore (SNS), Italy
Researcher **2003 - 2004**

Topic: Theoretical work on Quantum Atomic Gases.

Istanbul Kemerburgaz University, Istanbul, Turkey
Instructor **September 2015-**

- Electromagnetic Theory (EE 221).
- Advanced Engineering Mathematics (ECE 591).
- Electrical-Electronics Engineering Design Project I (EE 491).

Brno University of Technology, Brno, Czech Republic
Instructor **Fall 2013-2015**

- OptoElectronics and Integrated Optics.

Koç University, Istanbul, Turkey
Teaching Assistant

2007 - 2011

- Classical Electrodynamics (Phys 502).
- Solid State Physics (Phys 403).
- Mechanics (Phys 201).

EDUCATION

Koç University, Istanbul, Turkey
Passed qualifying examination in Fall 2009
Ph.D., Physics, 2007-2011

- Dissertation Topic: “Nonlinear Dynamical Aspects of the Dielectric Waveguide Surface Plasmon Josephson Junction”
- Advisor: Kaan Güven

Istanbul University, Istanbul, Turkey
M.S., Physics, 2002-2006.

- Dissertation Topic: “The Transport of Matter Through a Bose-Einstein Condensate in various Linear Arrays of Potential Wells”
- Advisor: Zehra Akdeniz
- co-Advisor: Mario P. Tosi

Istanbul University, Istanbul, Turkey
B.A., Physics, 1998-2002.

HONORS AND
AWARDS

Brno University of Technology (BUT), Brno, Czech Republic Excellent young researcher at BUT
no. CZ.1.07/2.3.00/30.0039 **2013-**
Koç University, Post Doctoral Research Fellowship project supported by Science and Technology Re-
search Council of Türkiye, TÜBİTAK **2011-2013**
Koç University, graduate fellowship. Includes tuition waiver, monthly stipend, laptop computer and
housing. **2007-2011**
The Abdus Salam International Centre for Theoretical Physics (ICTP), Research Fellowship for
theoretical work on Quantum Atomic Gases, Trieste, Italy. **10-20 August 2004**
INFN research unit in Pisa, Scuola Normale Superiore (SNS), Research Fellowship for theoretical
work on Quantum Atomic Gases, Pisa, Italy. **2003-2004**

RESEARCH
INTERESTS

- Plasmonics
- Nanofabrication techniques
- Integrated plasmonic structures/systems for biodetections
- Nanoantennas
- Nonlinear Optics

ADDITIONAL
TRAINING

Advanced Statistical Physics and Condensed Matter Physics Workshop, Institute of Theoretical and
Applied Physics (ITAP), Marmaris, Turkey.
Summer-2007
International School of Physics Enrico Fermi on Ultra Cold Fermi Gases, Varenna, Italy.
20-30 June 2006
International Kaş-School, “Current Trends in Statistical Physics”, Kaş, Antalya, Turkey.
24 September-4 October 2002

PUBLICATIONS

1. Yasa Ekşioğlu, Arif E. Çetin, Jiří Petráček, *Optical Response of Plasmonic Nanohole Arrays: Comparison of Square and Hexagonal Lattices*, Plasmonics, DOI: 10.1007/s11468-015-0118-9 (2015).
2. Yasa Ekşioğlu, Jiří Petráček, “*Dynamical Analysis in Kerr type Nonlinear Coupled Ring Resonators*”, Opt Quant Electron, DOI 10.1007/s11082-015-0210-6 (2015).
3. Arif E. Cetin, Dordaneh Etezadi, Betty C. Galarreta, Mickael P. Busson, Yasa Eksioğlu, and Hatice Altug, “*Plasmonic Nanohole Arrays on Robust Hybrid Substrate for Highly Sensitive Label-Free Biosensing*”, ACS Photonics, Vol. 2, No 8, pp. 1167-1174 (2015).
4. Jiří Petráček, Yasa Ekşioğlu, Anna Sterkhova, “*Simulation of Self-Pulsing in Kerr-Nonlinear Coupled Ring Resonators*”, Optics Communications **318**, 147-151 (2014).
5. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven, “*Dissipative Josephson junction of an optical soliton and a surface plasmon*”, Physical Review A **87**, 023823 (2013).
6. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven, “*Dynamical analysis of a weakly coupled nonlinear dielectric waveguide: Surface-plasmon model as another type of Josephson junction*”, Physical Review A **84**, 033805 (2011).
7. Yasa Eksioğlu, Patrizia Vignolo and Mario P. Tosi, “*Matter- wave interferometry in periodic and quasi-periodic arrays*”, Optics Communications **243** , 175-181 (2004).

CONFERENCE
PROCEEDINGS

1. Yasa Ekşioğlu, Jiří Petráček “*Self-pulsing in nonlinear Kerr-type coupled ring resonators with effect of loss*” SPIE Optics and Optoelectronics, Proc. SPIE 9503, Nonlinear Optics and Applications IX, 950309, May 2015 DOI: 10.1117/12.2178798.
2. Yasa Ekşioğlu, Jiří Petráček “*Self-pulsing and chaos in coupled ring resonators with non-instantaneous Kerr-nonlinear response*” In: Proc. 14th International Conference on Numerical Simulation of Optoelectronic Devices, NUSOD 2014, Postdeadline papers, 1-4 September 2014, pages 1-2. ISBN: 978-1-47993682-3.
3. Yasa Ekşioğlu, Jiří Petráček, “*Self-Pulsing and Chaos in Kerr-Nonlinear Coupled Ring Resonators*” ICTON 2014 In: Proc. 16th Int. Conference on Transparent Optical Networks ICTON 2014, paper Mo.D6.5 (pages 1-4). ISSN: 2162-7339 ISBN: 978-147995600-5 DOI: 10.1109/ICTON.2014.6876330.
4. Ivan Richter, Pavel Kwiecien, Jan Fiala, Jiří Petráček, Yasa Ekşioğlu, Vladimr Kuzmiak, and Jiří Čtyroký “*Physics and advanced simulations of photonic and plasmonic structures*” ICTON 2014. In: Proc. 16th Int. Conference on Transparent Optical Networks ICTON 2014, paper Tu.D5.3 (pages 1-9). ISSN: 2162-7339, ISBN: 978-147995600-5.
5. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven “*Dynamical properties of a coupled nonlinear dielectric waveguide- Surface-plasmon system as a new type of Josephson junction*”, IEEE Conference Publications, Optical MEMS and Nanophotonics (OMN), DOI:10.1109/OMEMS.2011.6031097 Page(s): 107-108, 2011.
6. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven “*Dynamical properties of a coupled nonlinear dielectric waveguide - surface-plasmon system as another type of Josephson junction*”, Proceedings of SPIE Vol.8306 830610, 2011.

7. Yasa Ekşioğlu “*The role of fibonacci sequence in the transport of Bose-Einstein condensate atoms in optical lattices*”, Six International Conference of the Balkan Physical Union Book Series: AIP CONFERENCE PROCEEDINGS Volume: 899 Pages: 597-597, (2007.)

8. Y. Eksioğlu, P. Vignolo and M. P. Tosi, “*Condensate localization in a quasi-periodic structure*”, Laser Physics, **15**, No. 2, pp.356-360, (2005).

INTERNATIONAL
CONFERENCES

1. Yasa Ekşioğlu, Jiří Petráček “*Self-pulsing in nonlinear Kerr-type coupled ring resonators with effect of loss*” SPIE Optics and Optoelectronics, Prague, Czech Republic, April 13 - 16, 2015.

2. Yasa Ekşioğlu, Jiří Petráček “*Self-pulsing and chaos in coupled ring resonators with non-instantaneous Kerr-nonlinear response*” 14th International Conference on Numerical Simulation of Optoelectronic Devices, NUSOD, Palma de Mallorca, Spain, September 1-4, 2014.

3. Yasa Ekşioğlu, Jiří Petráček, “*Self-Pulsing and Chaos in Kerr-Nonlinear Coupled Ring Resonators*”, 16th International Conference on Transparent Optical Networks ICTON, Graz, Austria, July 6-10, 2014.

4. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu and Kaan Güven, “*The coupled optical soliton and surface plasmon system with reminiscent features of Josephson junction dynamics*”, Feza Gürsey Institute Imperial College International Summer School and Research Workshop on Complexity, Istanbul, Turkey, September 5-10, 2011.

5. Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu and Kaan Güven, “*Dynamical properties of a coupled nonlinear dielectric waveguide surface-plasmon system as a new type of Josephson Junction*”, 7th Int. Conf. on Photonics, Device and Systems, Prague, Czech Republic, August 24-26 , 2011.

6. Yasa Ekşioğlu, Ö. E. Müstecaplıoğlu and K. Güven, “*Coupled nonlinear dielectric waveguide surface-plasmon system as a new type of Josephson Junction*”, 16th Int. Conf. on Optical MEMS and Nanophotonics, Koç University, Istanbul, Turkey, August 8-11, 2011.

NATIONAL
CONFERENCES

1. Yasa Eksioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven, “*Dynamical properties of a coupled nonlinear dielectric waveguide surface-plasmon josephson junction system*”, 15. Physics of Liquids National Workshop, 24-26 October, 2011, Piri Reis University, Istanbul, Turkey.

2. Yasa Eksioğlu, Özgür Esat Müstecaplıoğlu, “*The behavior of one-and two-Component Bose-Einstein Condensation in a 1D optical lattice*”, 15th Istanbul Statistical Physics Days, 19-21 June 2008, Koç University, Turkey.

3. Yasa Eksioğlu, “*Bose Einstein Condensation*”, “Disordered Systems: Theory and Its Applications”, V. National Symposium , 23-30 August 2005, Karaburun, Izmir.

4. Yasa Eksioğlu, Patrizia Vignolo, Zehra Akdeniz and M. P. Tosi, “*Transport of matter through a Bose-Einstein condensate in optical lattices*”, 12th Istanbul Statistical Physics Days, 30 June-2 July 2005, Istanbul Technical University, Istanbul, Turkey.

5. Yasa Eksioğlu, Patrizia Vignolo, Zehra Akdeniz and M. P. Tosi, “*Transmittivity of Bose- Einstein condensate on periodic and quasi-periodic lattices*”, VII. Physics of Liquids National Workshop 19-21 September 2003, Istanbul, Turkey.

RESEARCH SKILLS

- Fabrication: E-beam Metal Evaporation, Spectroscopic Ellipsometer, Metal Sputtering, Photolithography, Dry/wet etching techniques
- Mask Design Software: Tanner EDA L-Edit
- Simulation: Lumerical FDTD solutions
- Computational Language: MathWorks-MATLAB
- Operating systems: Microsoft Windows
- Office automation: TEX/LATEX, Microsoft Office

STANDARDIZED TESTS

IBT TOEFL

- Date: September, 2007
- Rank: Passed

LANGUAGES

- Turkish: Native
- English: Fluent
- Italian: Basic

REFERENCES

Prof. RNDr. Jiří Petráček

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Faculty of Mechanical Engineering
Brno University of Technology
Technická 2896/2 616 69 Brno Czech Republic

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Koç University
Rumelifeneri Yolu Sarıyer 34450, Istanbul, Turkey

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Rumelifeneri Yolu Sarıyer 34450, Istanbul, Turkey

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CNRS 1361 route des Lucioles 06560 Valbonne, France

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