CURRICULUM VITAE

Aşkin KOCABAŞ
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EDUCATION

Ph.D., Department of Physics 2003-2008
Bilkent University, Ankara, Turkey

M.S., Department of Physics 2001-2003
Bilkent University, Ankara, Turkey

B.S., Department of Physics 1996-2001
Bogazici University, Istanbul, Turkey

RESEARCH EXPERIENCE

Assistant Professor 2015- present
Department of Physics, Koç University
- Whole brain imaging.
- Synthetic neural networks.
- Controllability of complex neural networks.

Postdoctoral Research Fellow 2008-2015
FAS Center for Systems Biology, **Harvard University**
Advisor: **Prof. Sharad Ramanathan**
- Optogenetic manipulation of neural activities to control complex behaviors in *Caenorhabditis elegans*.
- Developing technologies for whole brain imaging in freely moving animals.

Ph.D. Thesis 2003-2008
Department of Physics, Bilkent University
Advisor: Prof. Atilla Aydinli
Thesis Title: Plasmonic Band Gap Cavities
- Investigating the plasmonic band gap cavities.
- Developing nanostructured surfaces for surface-enhanced Raman scattering (SERS).

NATO Science for Peace and Security Programme 2005
Russian Academy of Science, Moscow, Russia
Advisor: Prof. Victor Sokolov
- Designing and fabricating polymer Bragg grating filters for DWDM applications.

M.S. Thesis 2001-2003
Department of Physics, Bilkent University
Advisor: Prof. Atilla Aydinli
Thesis Title: Polarization independent thermo-optic modulator for integrated optics.
- Designing and fabricating compact polarization independent thermo-optic modulators for integrated optical circuits.
- Designing and building plasma enhanced chemical vapor deposition systems for polymer synthesis for integrated optical applications.

Undergraduate Research 1998-2001
Department of Physics, Bogazici University
Advisor: Yanni Skarlatos & Gulen Aktas
- Investigating a grain boundary scattering in thin metal films.

TEACHING EXPERIENCE

• General Physics I, Instructor, Koç University, 2015
• Quantum Mechanics Laboratory, Instructor, Bilkent University, 2007
• Optics Laboratory, Teaching Assistant (T.A.), Bilkent University, 2003-2007
• Ultrafast Optics, T.A., Bilkent University, 2004-2005
• Experimental Methods in Applied Physics, T.A., Bilkent University, 2002-2003
• Freshman Physics Laboratory, T.A., Bilkent University, 2001-2002

HONORS AND AWARDS

• Human Frontier Science Program, Cross-Disciplinary Fellowships. 2008-2011

• Full graduate scholarship awarded by Bilkent University, Turkey. 2001-2008

• TUBITAK Science Scholarship. 1998-2000

• Full undergraduate scholarship awarded by Bogazici University, Turkey. 1996-2001

NEWS

• Harvard Gazette: `Controlling behavior, remotely`

• Human Frontier Science Program: `Remote controlling the behavior of the worm`

• Optics & Photonics News: `Optical tools for manipulating neurons`

INVITED TALKS

• Elektro-Optik ve Fotonik Çalışma Toplantısını, (Fotonik 2015),2015, Ankara
• MIT, Physics Seminar, 2014, Cambridge, MA
• MIT, Boston worm meeting, 2014, Cambridge, MA
• UCSD, Quantitative Biology Seminar , 2014, La Jolla, CA
• UCSB, Quantitative Biology Seminar , 2014, Santa Barbara, CA
• Tufts University, Biomedical Engineering Seminar, 2014, Medford, MA
• University of Miami, Biophysics Seminar, 2014, Coral Gables, FL
• Information Theory Workshop 2012 (ITW) EPFL, Lausanne, Switzerland
• Ohio State University, Biophysics Seminar, 2013, Ohio

PUBLICATIONS

17) "Controlling interneuron activity in Caenorhabditis elegans to evoke chemotactic behaviour",
A. Kocabas, CH Shen, ZV Guo, S Ramanathan, **Nature**, 490, 273 (2012).

16) "Slowing down surface plasmons on a Moiré surface",
A. Kocabas, S.S. Senlik, A. Aydinli, **Phys. Rev. Lett.** 102, 063901 (2009).

15) "Plasmonic band gap cavities on biharmonic gratings",
A. Kocabas, S.S. Senlik, A. Aydinli, **Phys. Rev. B** 77, 195130 (2008).

14) "Plasmonic band gap structures for surface enhanced Raman scattering",
A. Kocabas, G. Ertas, S.S. Senlik and A. Aydinli, Opt. Express, 16, 12469 (2008).

13) "Localization of surface plasmon polaritons in hexagonal arrays of Moiré cavities",
S. Balci, **A. Kocabas**, C. Kocabas, A. Aydinli, Applied Physics Letters, 98, 031101 (2011).

12) "Coupled plasmonic cavities on Moire surfaces",
S Balci, M. Karabiyik, **A. Kocabas**, C. Kocabas, A. Aydinli, Plasmonics, 5, 429 (2010).

11) "Slowing surface plasmon polaritons on plasmonic coupled cavities by tuning grating grooves",
S. Balci, **A. Kocabas**, C. Kocabas, A. Aydinli, Applied Physics Letters, 97, 131103 (2010).

10) "Tunable surface plasmon resonance on an elastomeric substrate",
S. Olcum, **A. Kocabas**, G. Ertas, A. Atalar, A. Aydinli - Opt. Express, 17, 8542 (2009).

9) "Grating based plasmonic band gap cavities",
SS Senlik, **A. Kocabas**, A. Aydinli - Opt. Express, 17, 15541 (2009).

8) "Chemical and Topographical Modification of PHBV Surface to Promote Osteoblast Alignment and Confinement",

H. Kenar, **A. Kocabas**, A. Aydinli, V. Hasirci, Journal of Biomedical Materials Research: Part A, 85A, 1001 (2008).

7) "Gratings in polymeric waveguides'',
G. Mishakov, V. Sokolov, **A. Kocabas**, A. Aydinli, Proc. SPIE 6613, 66130P (2007).

6) "Polymeric waveguide Bragg grating filter using soft lithography",
A. Kocabas and A. Aydinli, Opt. Express, Vol. 14, Issue 22, pp. 10228-10232 (2006).

5) "An elastomeric grating coupler",
A. Kocabas, F. Ay, A. Dana, A. Aydinli, J. Opt. A: Pure Appl. Opt, 2006, 8, 85 (2006).

4) "Excitation of a surface plasmon with an elastomeric grating",
A. Kocabas, A. Dâna, A. Aydinli, Applied Physics Letters, 89, 041123 (2006).

3) "High-refractive-index measurement with an elastomeric grating coupler",
A. Kocabas, F. Ay, A. Dâna, I. Kiyat and A. Aydinli, Optics Letters, Vol. 30, (2005).

2) "Stress effects in prism coupling measurements of thin polymer films",
S. Agan, F. Ay, **A. Kocabas**, A. Aydinli, Applied Physics A, 80, 341 (2005).

1) "Prism Coupling Technique Investigation of Elasto-optical Properties of Thin Polymer Films",
F. Ay, **A. Kocabas**, C. Kocabas, A. Aydinli, S. Agan, J. Applied Physics, 96, 7147 (2004).