



College of Sciences

FACULTY RESOURCE GUIDE

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The College of Sciences covers a wide range of expertise in applied as well as theoretical areas of Chemistry, Mathematics, Molecular Biology and Genetics, and Physics. The mission of the college is to be a center of excellence in both research and teaching. Our faculty members are engaged in teaching the core, area, and elective courses of the College at the undergraduate and graduate level. At the same time, they are all active in research and internationally recognized in their fields of expertise. Most of the faculties are also recipients of the established scientific awards from the Turkish Academy of Sciences (TÜBA) or the Scientific and Technological Research Council of Turkey (TÜBİTAK)

The College of Sciences houses numerous research facilities in biochemistry, cell biology, ceramics, computational chemistry, computational physics, genetics, inorganic synthesis, laser science and technology, metamaterials and plasmonics, micro-photonics, molecular biology, neuroscience, polymer chemistry, nano-photonics, spectroscopy, surface chemistry, surface plasmon resonance, quantum dot synthesis, and x-ray diffraction. Furthermore, the Center for Surface Science and Technology (KUYTAM) and the Photonics Research Center (KUPRC) provide state-of-the-art infrastructure that enable interdisciplinary studies and foster collaboration with industrial partners as well as other departments in Koç University. The on-going research projects have been sponsored by many national and international sources including the State Planning Agency (DPT), TÜBİTAK, TÜBA, European Union, and the National Science Foundation (NSF).

The faculty guide serves to highlight the educational background and areas of expertise of the College of Sciences faculty. We hope that the information provided here will lead to fruitful collaborations.

Alphan Sennaroğlu
Dean
College of Sciences

FACULTY TELEPHONE NUMBERS & E-MAIL ADDRESSES

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COLLEGE ADMINISTRATION

DEAN

Alphan Sennaroğlu +90-212-338-1429

ASSOCIATE DEAN

Adem Levent Demirel, +90-212-338-1350

FACULTY BY RESEARCH CENTERS

KUYTAM

Koç University Surface Science and Technology Center

Director

İskender Yılıg6r +90-212-338-1418

KUPRC

Koç University Photonics Research Center

Director

Alphan Sennarođlu +90-212-338-1400

FACULTY BY LABORATORIES

CHEMISTRY DEPARTMENT RESEARCH CENTERS AND LABORATORIES

Polymer Research Laboratory

<http://portal.ku.edu.tr/~iyilgor/index.htm>

İskender Yılıg6r, Emel Yılıg6r

Computational Biology & Chemistry Laboratory

<http://home.ku.edu.tr/~ersin>

Ersin Yurtsever

Inorganic Chemistry Research Laboratory

<http://portal.ku.edu.tr/~inorganic/>

Mehmet Somer

Thin Film & Surface Physical Chemistry Laboratory

<http://portal.ku.edu.tr/~ldemirel/>

Levent Demirel

Polymers and Nanomaterials Research laboratory

<http://portal.ku.edu.tr/~fyagci/>

Funda Yađcı Acar

Layered Materials and Ceramics Research Laboratory

<http://portal.ku.edu.tr/~ugunal/>

Uđur Ünal

Surface Plasmon Research Laboratory

<http://portal.ku.edu.tr/~obirer/>

Özgür Birer

Materials Wet Synthesis Laboratory

Özgür Birer, Uđur Ünal

PHYSICS DEPARTMENT RESEARCH CENTERS AND LABORATORIES

Laser Research Laboratory (LRL)

<http://portal.ku.edu.tr/~KULaserLab/>

Alphan Sennarođlu

Microphotonics Research Laboratory (MRL)

<http://home.ku.edu.tr/~microphotonics/>

Ali Serpengüzel

Nano-Optics Research Laboratory (NRL)

<http://nano-optics.ku.edu.tr/>

Alper Kiraz

MOLECULAR BIOLOGY AND GENETICS DEPARTMENT RESEARCH CENTERS AND LABORATORIES

Molecular Biology and Genetics Research Laboratory

Gülayşe İnce Dunn, Cory Dunn

FACULTY BY DEPARTMENT

CHEMISTRY

Funda H. Yađcı Acar
Özgür Birer
Adem Levent Demirel
Durata Hacıu Ertek
Mehmet Suat Somer
Uđur Ünal
Emel Yılıg6r
İskender Yılıg6r
Ersin Yurtsever

MATHEMATICS

Emre Alkan
Attila Aşkar
Kazım Büyükboduk
Elvan Ceyhan
Mine Çađlar
Barış oşkunüzer
Tolga Etgü
Varga Kalantrov
Selda Küçükçifçi
Emre Mengi
Ali Mostafazadeh
Burak Özbađcı
Ali Ülger
Sinan Ünver
Emine Şule Yazıcı

PHYSICS

Tekin Dereli
Kaan Güven
Menderes Işkın
Alkan Kabakçiođlu
Alper Kiraz
Özgür E. Müstecapliođlu
Alphan Sennarođlu
Ali Serpengüzel

MOLECULAR BIOLOGY & GENETICS

Cory D. Dunn
Gülayşe İnce Dunn
Nurhan Özlü

FACULTY BY SPECIALTY

A

ADHESION

Adem Levent Demirel

ANALYTIC NUMBER THEORY

Emre Alkan

APPLIED MATH AND STATISTICS

Elvan Ceyhan

AREAS OF SOLID STATE CHEMISTRY

Mehmet Suat Somer

ARITHMETIC ALGEBRAIC GEOMETRY

Kazım Büyükboduk

ASYMPTOTIC GROUP THEORY

Emre Alkan

AUTOMORPHIC AND MODULAR FORMS

Emre Alkan

C

CELL BIOLOGY

Cory D. Dunn, Gülayşe İnce Dunn,
Nurhan Özlü

CHARACTERIZATION METHODS: XRD
FOR POWDER AND SINGLE CRYSTALS,
FT RAMAN SPECTROSCOPY, FT-IR/
FIR SPECTROSCOPY (4000–100 CM⁻¹),
THERMAL ANALYSIS (DTA/TG)
Mehmet Suat Somer

COATINGS

Adem Levent Demirel

COMBINATORICS

Selda Küçükçifçi, Emine Şule Yazıcı

COMBINATORIAL DESIGN THEORY

Selda Küçükçifçi

COMPUTATIONAL MATHEMATICS

Emine Şule Yazıcı

CONDENSED MATTER PHYSICS

Kaan Güven

CONFORMATIONAL PROPERTIES OF (BIO)POLYMERS

Alkan Kabakçıoğlu

CONTINUUM MECHANICS

Attila Aşkar

D

DESIGN THEORY

Emine Şule Yazıcı

DIFFERENTIAL EQUATIONS

Attila Aşkar

DISSIPATIVE DYNAMICAL SYSTEMS

Varga Kalantarov

DISTRIBUTION OF SUBSETS OF REAL NUMBERS

Emre Alkan

E

ELECTROCHEMISTRY

Uğur Ünal

F

FEMTOSECOND LASERS

Alphan Sennaroğlu

FRICTION

Adem Levent Demirel

FUNCTIONAL ANALYSIS

Ali Ülger

G

GENERAL RELATIVITY

Tekin Dereli

GENETICS

Cory D. Dunn

GEOMETRY AND TOPOLOGY OF GAUGE FIELDS

Tekin Dereli

GEOMETRIC TOPOLOGY

Barış Coşkunüzer

GLASS LASERS

Alphan Sennaroğlu

GRAPH THEORY

Selda Küçükçifçi

ECONOMY OF DEVELOPMENT

Ziya Öniş

H

HIGH DIMENSIONAL DATA ANALYSIS

Elvan Ceyhan

I

INORGANIC SYNTHESIS (NANOSCALED PARTICLE SYNTHESIS)

Durata Hacıu Ertek

L

LASERS

Alphan Sennaroğlu

LAYERED OXIDE MATERIALS

Uğur Ünal

LINEAR MODELS

Elvan Ceyhan

LOW-DIMENSIONAL MANIFOLDS

Burak Özbağcı

LOW-DIMENSIONAL TOPOLOGY

Tolga Etgü

M

MATHEMATICAL PHYSICS

Ali Mostafazadeh

MATHEMATICS

Sinan Ünver

MEDICAL IMAGE ANALYSIS

Elvan Ceyhan

METAMATERIALS AND TRANSFORMATION OPTICS

Kaan Güven

MICROBIOLOGY

Cory D. Dunn

MICRO-OPTICS

Alper Kiraz

MINIMAL SURFACES

Barış Coşkunüzer

MODELLING BIOLOGICAL INTERACTIONS

Alkan Kabakçiođlu

MOLECULAR BIOLOGY

Gülayşe İnce Dunn

N

NANOMATERIALS

Özgür Birer

NANO-OPTICS

Kaan Güven, Alper Kiraz

NANO-STRUCTURED MATERIALS

Adem Levent Demirel

NEUROBIOLOGY

Gülayşe İnce Dunn

NONLINEAR PROBLEMS OF CONTINUUM MECHANICS

Varga Kalantarov

NUMBER THEORY

Kazım Büyükboduk

NUMERICAL ANALYSIS

Emre Mengi

NUMERICAL LINEAR ALGEBRA

Emre Mengi

NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS

Attila Aşkar

NUMERICAL OPTIMIZATION

Emre Mengi

O

OPTICAL MICROCAVITIES

Alper Kiraz

OPTICS

Alper Kiraz

OPTOELECTRONICS

Ali Serpengüzel

R

RANDOM GRAPHS AND THEIR APPLICATIONS

Elvan Ceyhan

RENORMALIZATION OF QUANTUM FIELD THEORIES

Tekin Dereli

RHEOLOGY

Adem Levent Demirel

S

SCIENTIFIC COMPUTATION

Kaan Güven

SELF-ORGANIZATION OF POLYMERS, POLYPEPTIDES

Adem Levent Demirel

SIEVE THEORY

Emre Alkan

SINGLE MOLECULE MICROSCOPY

Alper Kiraz

SINGLE MOLECULE SPECTROSCOPY

Alper Kiraz

SOLID STATE CHEMISTRY

Uđur Ünal

SOLID-STATE LASERS

Alphan Sennarođlu

SPATIAL PATTERN ANALYSIS

Elvan Ceyhan

SPECTROSCOPY

Özgür Birer, Alphan Sennarođlu

SPIN STRUCTURES

Tekin Dereli

STATISTICAL MECHANICS

Elvan Ceyhan

STATISTICAL PHYSICS OF COMPLEX SYSTEMS

Alkan Kabakçiođlu

STATISTICAL THERMODYNAMICS

Ersin Yurtsever

STOCHASTIC PROCESSES

Mine Çađlar

SURFACES

Özgür Birer

SURFACES & INTERFACES

Adem Levent Demirel

SYMPLECTIC AND CONTACT TOPOLOGY

Burak Özbađcı

SYNTHESIS AND CHARACTERIZATION OF: TERNARY BORON NITRIDES, POLAR INTERMETALLIC COMPOUNDS (ZINTELL PHASES), CLUSTER COMPOUNDS, NANO AND MESO SCALED RARE EARTH OXIDES, SOLID HYDROGEN STORAGE MATERIALS

Mehmet Suat Somer

SYNTHESIS METHODS: HIGH TEMPERATURE SYNTHESIS (UP TO 1500 C), HYDROTHERMAL SYNTHESIS, SYNTHESIS IN LIQUID AMMONIA, SOL-GEL PROCESSES

Mehmet Suat Somer

T

THEORETICAL CONDENSED ATOMIC AND MOLECULAR PHYSICS

Menderes Işkın

THEORETICAL CHEMISTRY

Ersin Yurtsever

THIN FILMS

Adem Levent Demirel

U

ULTRAFAST AND NONLINEAR OPTICS

Alphan Sennarođlu

V

VIBRATIONAL SPECTROSCOPY

Mehmet Suat Somer



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HAVVA FUNDA YAĞCI ACAR

Assistant Professor of Chemistry

POLYMER AND NANOMATERIAL RESEARCH

Ph.D. in Polymer Science and Engineering, University of Southern Mississippi, 1999; M.Sc. in Chemistry, Boğaziçi University, 1995; B.Sc. in Chemistry, Boğaziçi University, 1993

Dr. Yağcı Acar teaches organic chemistry, general chemistry, biomaterials, polymers, nanoparticles. Her recent research focuses on the development of magnetic and luminescent nanoparticles, development of targeted contrast agents and drug delivery vehicles, organic-inorganic composites, self-assembly in polymers, development of new functional polymers for bioapplications, development of new high-heat thermoplastics and investigation of structure-property relationships in materials.

SELECTED PUBLICATIONS

S. Ozturk, F. Selcuk, H. Yağcı Acar*, "Development of Color Tunable Aqueous CdS-Cysteine Quantum Dots with Improved Efficiency and Investigation of Cytotoxicity" *Journal of Nanoscience and Nanotechnology*, in press

H. Yağcı Acar*, R. Kas, E. Yurtsever, C. Ozen, I. Lieberwirth, "Emergence of 2MPA as an Effective Coating for Highly Stable and Luminescent Quantum Dots" *J Phys Chem Part C*, 113, 10005–10012, 2009

X. Wei, O. Ugurlu, A. Ankit, H. Yağcı Acar, M. Akinc*, "Dissolution behavior of Si, Zn-codoped tricalcium phosphates", *Materials Science and Engineering:C* 2009, 29(1), 126-135

H. Yağcı Acar*, S. Celebi, N. I. Serttunali, I. Lieberwirth, "Development of Highly Stable and Luminescent Aqueous CdS Quantum Dots with Poly(acrylic acid)/Mercaptoacetic Binary Coating System", *Journal of Nanoscience and Nanotechnology* 2009, 9, 2820–2829

S. Celebi, A. K. Erdamar, A. Sennaroğlu, A. Kurt, H. Yağcı Acar*, "Synthesis and Characterization of Poly(acrylic acid) Stabilized cadmium Sulfide Quantum Dots", *J. Physical Chemistry Part B* 2007, 111(44), 12668-12675

H. Yağcı Acar*, R. S. Garaas, F. Syud, P. Bonitatebus, A. M. Kulkarni, "Superparamagnetic Nanoparticles Stabilized by Polymerized PEGylated Coatings", *J. Magnetism and Magnetic Materials* 2005, 29 (1), 1-7

H. Yağcı Acar*, C. Ostrowski, L. J. Mathias, "Investigation of Structure-Property Relationships in Aromatic Polyimides and Polyamides", pp. 3-18, Ed. K. L. Mittal, *Polyimides and Other High Temperature Polymers: Synthesis, Characterization and Applications*, Vol 1, VSP, 2001

H. Yağcı Acar, J. Jensen, K. Thigpen, J. McGowen, D. McCormick, L. Somlai, L. J. Mathias*, "Evaluation of The Spacer Effect on Adamantane Containing Vinyl Polymer Tg's", *Macromolecules* 2000, 33, 3855-3859

H. Yağcı Acar, C. Ostrowski, L. J. Mathias*, "Synthesis and Characterization of Novel Aromatic Polyimides from 4,4-Bis(p-aminophenoxy)methyl-1-cyclohexene", *J. Polym. Sci. Part A Polym. Chem.* 1999, 37, 1189-1197

T. L. Grubb, V. L. Ulery, T. J. Smith, G. L. Tullos, H. Yağcı, L. J. Mathias*, M. Langsam, "Highly Soluble Polyimides From Sterically Hindered Diamines", *Polymer* 1999, 40, 4279-4288

H. Yağcı, L. J. Mathias*, "Synthesis and Characterization of Aromatic Polyamides and Polyimides from Triethyl- and Di-t-butylhydroquinone Based Ether Linked Diamines", *Polymer* 1998, 39, 16, 3779-3786

GRANTS and CONSULTING

Marie Curie IRG, Synthesis of Magnetic Quantum Dots, MIRC-CT-2006-031072

TÜBİTAK, Kararlı ve Küçük Süperaramanyetik Nanoparçacıkların Geliştirilmesi, Proje # 104M401



TÜBİTAK, Manyetik "Polimer-Anorganik Hibrid Malzemeler" in Geliştirilmesi ve Optik Tarayıcı Uygulamalarında Kullanılması, Proje # 104M161. Co-investigators: Mehmet Somer, A. Levent Demirel, Hakan Ürey

PATENTS

H. Yağcı Acar, A. Torres, WO2006055447 (A2), Cationic nanoparticle having an inorganic core.
Q. Ye, D. B. Hall, W. D. Richards, D. J. Brunelle; H. Yağcı Acar, JP2007056263 (A), Copolyetherimide.
D. Brunelle, H. Yağcı Acar, F. Khouri, T. L. Guggenheim, D. W. Woodruff, N. E. Johnson, WO2007100473 (A2), Phase transfer catalyzed method for preparation of polyetherimides
P. R. Malenfant, H. Acar, P. J. Bonitatebus, T. Dixon, T. William; A. M. Kulkarni, US 2006018835 A1, Nanoparticles coated with biocompatible polymers as MRI contrast agent
H. Yağcı Acar, F. A. Syud, R. N. Garaas, P. J. Bonitatebus, A. M. Kulkarni, US 2005260137 A1, Contrast agents for magnetic resonance imaging
D. Brunelle, H. Yağcı Acar, F. Khouri, W. Richards, US 6849706, Copolyetherimides, 2005
P. Bonitatebus, H. Yağcı Acar, M. Larsen, US 6797380, EP1386886 (A1), Nanoparticle having an inorganic core, 2004
H. Yağcı Acar, D. Brunelle, US 7071282, Benzimidazole diamine-based polyetherimide compositions and methods for making them, 2004
H. Yağcı Acar, P. Bonitatebus, US 20040022937A1, EP1394223 (A1) Method of making crystalline nanoparticles

PROFESSIONAL EXPERIENCE

Academic

Sep 2004 - Assistant Professor, Department of Chemistry, Koç University

Visiting Academic Positions

1998 March-August Visiting Scientist, Universite d'Aix-Marseille III, Marseille, France, industrial collaboration: Elf Atochem, University of Southern Mississippi -Universite d'Aix-Marseille III

Industry Experience

2002-2004 Lead Professional, General Electric Global Research Center, Polymer and Specialty

ChemicalsTechnology, Emerging Technologies Laboratory, Niskayuna, NY, USA

2000-2002 Post-doctoral Research Associate, General Electric Global Research Center, Polymer and Specialty Chemicals Technology Laboratory, Niskayuna, NY, USA

HONORS and AWARDS

Received Whitney Technical Achievement Reward-2002
L'OREAL-UNESCO Turkey National fellowship for Women in Science-2008

MEMBER

Materials Research Society



EMRE ALKAN

Assistant Professor of Mathematics

ANALYTIC NUMBER THEORY AUTOMORPHIC AND MODULAR FORMS SIEVE THEORY

PhD. in Mathematics, 2003, University of Wisconsin at Madison; B.S. in Mathematics, 1996, Boğaziçi University

Professor Alkan's teaching interests are analytic number theory and developing new strategies for teaching undergraduate level math courses. His recent research focuses on the areas of number theory and any kind of interaction of number theory with other disciplines

SELECTED PUBLICATIONS

Nonvanishing of Fourier coefficients of modular forms, Proceedings of American Mathematical Society, 131, (2003), no. 6, 1673-1680

On the enumeration of finite abelian and solvable groups, Journal of Number Theory, 101, (2003), no. 2, 404-423 (with Alexandru Zaharescu) Nonvanishing of Fourier coefficients of newforms in progressions, Acta Arithmetica, 116, (2005), no. 1, 81-98

On the size of gaps in the Fourier expansion of modular forms, Canadian Journal of Mathematics, 57, (2005), no. 3, 449-470

(with Glyn Harman and Alexandru Zaharescu) Diophantine approximation with mild divisibility constraints, Journal of Number Theory, 118, (2006), no. 1, 1-14

Davenport constant for finite abelian groups, Indagationes Mathematicae, 19, (2008), no. 1, 1-21

(with Maosheng Xiong and Alexandru Zaharescu) A bias phenomenon on the behavior of Dedekind sums, Mathematical Research Letters, 15, (2008), no. 5, 1039-1052.

(with Maosheng Xiong and Alexandru Zaharescu) Quotients of values of the Dedekind eta function, Mathematische Annalen, 342, (2008), no. 1, 157-176

(with Kevin Ford and Alexandru Zaharescu) Diophantine approximation with arithmetic functions I, Transactions of American Mathematical Society, 361, (2009), no. 5, 2263-2275

DISTRIBUTION OF SUBSETS OF REAL NUMBERS ASYMPTOTIC GROUP THEORY

GRANTS and CONSULTING

Tübitak Career Award, Research Grant 2008-2010, "Poisson summation type formulas for meromorphic functions with applications to modular forms and infinite series identities"

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor of Mathematics, 2006-Present, Koç University

J. L. Doob Research Assistant Professor of Mathematics,

2003-2006, at University of Illinois at Urbana-Champaign

Research Assistant of Mathematics, 2002-2003, University of Wisconsin at Madison

Teaching Assistant of Mathematics, 1997-2002, University of Wisconsin at Madison

Teaching Assistant of Mathematics, 1996-1997, Boğaziçi University

HONORS and AWARDS

Bronze Medal winner at the International Mathematical Olympiad, 1991, Sweden

Class valedictorian, 1996, Boğaziçi University

Excellence in Teaching Award, 2002, University of Wisconsin at Madison

Excellence in Research Award, 2003, University of Wisconsin at Madison

Turkish Academy of Sciences (TÜBA) Distinguished Young Scholar Award, 2008



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ATTILA AŞKAR

Professor of Applied Mathematics

DIFFERENTIAL EQUATIONS NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS CONTINUUM MECHANICS

Ph.D. in Applied Mechanics, from Princeton University, 1969, Dipl. Ing. in Civil Engineering, İstanbul Technical University, 1966

Professor Aşkar teaches courses in Applied Mathematics, Differential Equations and Numerical Analysis. His recent research focuses scattering of classical and quantum waves; wavelet analysis and molecular dynamics, nonlinear differential equations.

SELECTED PUBLICATIONS

"Optimal control of molecular motion expressed through quantum fluid dynamics", B. Dey, H. A. Rabitz and A. Aşkar, Phys. Rev. A. 61, 043412-1, (2000)
"Solution of the quantum fluid dynamics equations with radial basis function interpolation", Xu-Guang Hu, Tak-San Ho, H. A. Rabitz and A. Aşkar, Phys. Rev. E. 61, 5967 (2000)
"Optimal control of molecular motion expressed through quantum fluid dynamics", B. Dey, H. A. Rabitz and A. Aşkar, "Selected Abstract from other Physical Review Journal", Phys. Rev. E, 61, 6032 (2000)
"Multivariate radial basis interpolation for solving quantum fluid dynamical equations", Hu XG, Ho TS, Rabitz H, A. Aşkar, Comput Math Appl 43 (3-5): 525-537 Feb-Mar 2002
"Optimal Reduced Dimensional Representation Of Classical Molecular Dynamics, B. K. Dey, H. Rabitz, A. Aşkar, J Chem Phys 119 (11): 5379-5387 Sep 15 2003
"Bohmian representation of the Nonlinear Schrödinger and Davey-Stuardson equations" A. Aşkar, manuscript, 2010

PROFESSIONAL EXPERIENCE

Academic

Professor of Applied Mathematics, Koç University, 2009 September - present
President, Koç University, 2001-2009 August
Provost, Koç University, 1998-2001
Dean of the College of Arts and Sciences, Koç University, 1993-1998

Professor of Mathematics, Koç University, 1993- present
Professor of Mathematics, Boğaziçi University, 1972-1993
Research fellow, TÜBİTAK (National Scientific and Technological Council of Turkey), 1971-1972
Research Associate, Brown University, 1969-1971

Visiting Academic Positions

Visiting Professor, Princeton University, 1975-1977; 1981 - 1983; 1987- 1988; 2009 (Fall semester)
Professeur Associé, Paris University, 1980 (Spring semester)
Visiting Scholar, Max-Planck Institute in Göttingen, 1981 (Fall semester)
Visiting Professor, Royal Institute of Technology in Stockholm, 1985 (Fall semester)

HONORS and AWARDS

TÜBİTAK's Young Scientist Award (Teşvik Ödülü), 1973
Turkish Ministry of Culture's the Information Age Award, 1990
TÜBİTAK's Science Award, 1993

MEMBER

National Academy of Sciences of Turkey, 1995 to present
Center for Excellence in Education, Washington, 2007 to present
Advisory Board, Near Eastern Studies at Princeton University, 2008 to present
Global Relations Forum (Global İlişkiler Forumu), 2009 to present



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ÖZGÜR BİRER

Assistant Professor of Chemistry

PHYSICAL CHEMISTRY SPECTROSCOPY

PhD Princeton University, 2007; MS & BS Bilkent University, 1998, 2000

Professor Özgür Birer teaches general chemistry, physical chemistry, quantum physics, and spectroscopy. His recent research focuses on surface-biomolecules interactions, spectroscopy, sonochemistry, characterization of nanomaterials.

SELECTED PUBLICATIONS

Schmidt D.A., Birer Ö., Funkner S., Born B.P., Gnanasekaran R., Schwaab G.W., Leitner D.M., Havenith M., "Rattling in the Cage: Ions as Probes of Sub-picosecond Water Network Dynamics" Journal of the American Chemical Society 2009, DOI: 10.1021/ja9083545

Gutberlet A., Schwaab G., Birer Ö., Masia M., Kaczmarek A., Forbert H., Havenith M., Marx D.; "Aggregation-Induced Dissociation of HCl(H₂O)₄ Below 1 K: The Smallest Droplet of Acid" Science 2009, 324, 1545-1548

Birer Ö., Havenith M.; "High-Resolution Infrared Spectroscopy of the Formic Acid Dimer" Annu. Rev. Phys. Chem. 2009, 60, 263-275

Gutberlet A.; Birer Ö.; Poerschke T.; Havenith M.; "High Resolution Infrared Spectroscopy of the Asymmetric C-H Stretch of 1,2,4,5-Tetracyanobenzene (TCNB) And (TCNB)₂ In Superfluid Helium Nanodroplets" J. Chem. Phys. 2008, 129, 174311

Metzelthin A.; Birer Ö.; Sánchez-García E.; Havenith M.; "High resolution IR-Spectroscopy Of Acetylene-Furan In Ultracold Helium Nanodroplets" J. Chem. Phys. 2008, 129, 114307

GRANTS and CONSULTING

TÜBİTAK 108T857: Development of metaloxide surfaces for surface plasmon resonance applications and real time

SURFACES NANOMATERIALS

monitoring of protein-surface interactions.

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor of Chemistry, Koç University, 2008-present

Post-Doc, Ruhr Universitaet-Bochum, 2007-2008

Pre-Post-Doc, University of Virginia, 2007

MEMBER

Deutsche Physikalische Gemeinschaft



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KAZIM BÜYÜKBODUK

Assistant Professor of Mathematics

NUMBER THEORY

ARITHMETIC ALGEBRAIC GEOMETRY

Ph.D. in Mathematics, 2007, Stanford University, B.S. in Mathematics, awarded by Bilkent University, 2002

Dr. Kazım Büyükboduk teaches freshman calculus, linear algebra, algebra, number theory, algebraic number theory, complex analysis, algebraic geometry, topology, real and functional analysis. His recent research focuses on bloch-kato conjectures and related themes, with an emphasis on the Euler / Kolyvagin system machinery. Most recently, Dr. Büyükboduk developed a theory of Euler systems of higher rank, which he already applied to prove important results towards conjectures known as “Gras’ conjectures” and “Main conjectures for totally real fields”

SELECTED PUBLICATIONS

Kolyvagin systems of Stark units . Journal für die Reine und Angewandte Mathematik, 631 (2009), 85-107
Stark units and the main conjectures for totally real fields . Compositio Math. 145(5), 1163-1195 (2009)
Height pairings, Exceptional zeros and Rubin’s formula. To appear in Commentarii Math. Helvetici
Tamagawa defect of Euler systems. Journal of Number Theory 129 (2009) 402 - 417
 Λ -adic Kolyvagin systems. Submitted to IMRN, 2008

GRANTS and CONSULTING

EU-FP7 International Reintegration Grant, 2008-2012 (Iwasawa Theory of Galois Representations)
TÜBİTAK-Kariyer Grant 2010-2012 (Galois Temsillerinin Deformasyonları, Bloch-Kato Sanıları Ve Euler Sistemleri)

PROFESSIONAL EXPERIENCE

Academic

2009-Present: Assistant Professor of Mathematics, Koç University
2008-2009: Postdoc, MPI Bonn

2007-2008: William Hodge Postdoctoral Fellow, IHES, Paris
2002-2007: Research and Teaching Assistant, Stanford University

HONORS and AWARDS

William Hodge Fellowship (Awarded to one recent Ph.D.), 2008, Institut de Hautes Etudes Scientifique
Silver medal, International Mathematical Olympiad, 1998, Taipei/Taiwan
Gold medal and Sema Yazar Special Prize (For highest score), National Mathematical Olympiad, 1997, Ankara

MEMBER

American Mathematical Society
Reviewer for Zentralblatt-Math of European Mathematical Society



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ELVAN CEYHAN

Assistant Professor of Mathematics

APPLIED MATH and STATISTICS
PROBABILISTIC INFERENCE
SPATIAL PATTERN ANALYSIS
PATTERN RECOGNITION
RANDOM GRAPHS and THEIR APPLICATIONS

STATISTICAL DEPTH
MEDICAL IMAGE ANALYSIS
LINEAR MODELS
HIGH DIMENSIONAL DATA ANALYSIS

Ph.D. in Applied Mathematics and Statistics, Johns Hopkins University, 2004; MSE in Mathematical Sciences, Johns Hopkins University, 2002; M.S. in Statistics, Oklahoma State University, 2000; B.S. in Mathematics, Koç University, 1997

Professor Ceyhan teaches statistics, probability, calculus, linear models, graph theory, combinatorics. His recent research focuses on the areas of probabilistic inference; spatial statistics, mostly on nearest neighbor methods and multi-class spatial patterns of segregation and association; pattern recognition; random graphs and digraphs; statistical depth; medical image analysis (pertaining morphometric changes in tissues due to a disease); linear models; computationally intensive methods: bootstrap and randomization; computational statistics; statistical inference for high dimensional data.

SELECTED PUBLICATIONS

E. Ceyhan, New Tests of Spatial Segregation Based on Nearest Neighbor Contingency Tables. *Scandinavian Journal of Statistics*, 37:147-165, 2010
E. Ceyhan and C.L. Goad, A Comparison of Analysis of Covariate-Adjusted Residuals and Analysis of Covariance. *Communications in Statistics – Simulation and Computation*, 38(10):2019-2038, November 2009
E. Ceyhan, Overall and Pairwise Segregation Tests Based on Nearest Neighbor Contingency Tables. *Computational Statistics & Data Analysis*, 53(8):2786-2808, 2009
E. Ceyhan, Class-Specific Tests of Segregation Based on Nearest Neighbor Contingency Tables. *Statistica Neerlandica*, 63(2):149-182(34), 2009
E. Ceyhan, On the Use of Nearest Neighbor Contingency Tables for Testing Spatial Segregation. To appear in

Environmental and Ecological Statistics. Article in press with doi:10.1007/s10651-008-0104-x

E. Ceyhan, The Distribution of the Domination Number of Class Cover Catch Digraphs for Non-uniform One-dimensional Data. *Discrete Mathematics*, 308:5376-5393, 2008

E. Ceyhan, C. E. Priebe, and D. J. Marchette, A New Family of Random Graphs for Testing Spatial Segregation. *Canadian Journal of Statistics*, 35(1):27-50, 2007

E. Ceyhan and C. E. Priebe, On the Distribution of the Domination Number of a New Family of Parametrized Random Digraphs. *Model Assisted Statistics and Applications*, 1(4):231-255, 2006

E. Ceyhan, C. E. Priebe, and J. C. Wierman, Relative Density of the Random r -Factor Proximity Catch Digraphs for Testing Spatial Patterns of Segregation and Association. *Computational Statistics & Data Analysis*, 50(8):1925-1964, 2006

E. Ceyhan and C. E. Priebe, The Use of Domination Number of a Random Proximity Catch Digraph for Testing Spatial Patterns of Segregation and Association. *Statistics & Probability Letters*, 73, 37-50, 2005

GRANTS

TÜBİTAK (Turkish Scientific and Technological Research Council) Kariyer Grant # 107T647, February 2008 - February 2011

HONORS and AWARDS

The Second Best Oral Presentation Award at the 30. National Radiology Congress, Antalya, Turkey, November 4-9, 2009

European Science Foundation (ESF) scholarship for the IASC-ERS Summer school "Computational Aspects in Environmental Statistics", Pamporovo, Bulgaria, 2009



Funding Award for 57th Session of the International Statistical Institute Durban, South Africa, 2009
Abel Wolman Fellowship, The Johns Hopkins University, 2000 - 2001

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor of Mathematics, 2005 Fall-Present, Koç University

Post-doctoral Fellow, 2004 June-2005 August, Center for Imaging Science, Johns Hopkins University Teaching Assistant, 2001 Fall, Johns Hopkins University

Research Assistant, 2000-2004, The Johns Hopkins University, Baltimore

Instructor, 1999 – 2000, Statistics Department, Oklahoma State University

Teaching Assistant, 1998 - 2000. Statistics Department, Oklahoma State University

Visiting Academic Positions

Visiting Scholar, 2007 Summer, Center for Bioengineering, BMM Labs: Bio-Acoustic-MEMS in Medicine, Harvard-MIT Health Science and Technology, Harvard Medical School, Brigham and Women's Hospital

MEMBER

TMD (Turkish Mathematical Society), 2007 - Present

AMS (American Mathematical Society), 2007 - Present

IASC-ISI (The International Association for Statistical Computing-A Section of the International Statistical Institute), 2007 - Present

IMS (Institute of Mathematical Statistics), 2003 - Present

ASA (American Statistical Association), 1999 - 2004

Phi Kappa Phi Honor Society, 1999 -2005, 2008 - Present



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BARIŞ COŞKUNÜZER

Assistant Professor of Mathematics

MINIMAL SURFACES GEOMETRIC TOPOLOGY

Ph.D. in Mathematics, Princeton University, 2004; M.S. in Mathematics, Caltech, 2001; B.S. in Mathematics, Boğaziçi University, 1999

Professor Coşkunüzer's teaching interests are geometry and topology. His recent research focuses on minimal surfaces and geometric topology.

SELECTED PUBLICATIONS

Generic Uniqueness of Area Min. Disks for Ext. Curves, to appear in American J. Math.

Foliations of Hyperbolic Space by CMC Hypersurfaces, to appear in IMRN

LA Planes in Hyperbolic 3-Space are Prop. Embedded, Indiana Univ. Math. J. 58 (2009) 381-392

Generic Uniqueness of Least Area Planes, Geometry & Topology 10 (2006) 401-412

Uniform 1-cochains and Genuine Laminations, Topology 45 (2006) 751-784

GRANTS

NSF Topology Research Grant (2006-08) Asymptotic Plateau Problem in Hyperbolic Space

TÜBİTAK Career Research Grant (2008-10) Least Area Planes in Hyperbolic Space

EU - FP7 Marie Curie Research Grant (2008-12) Minimal Surfaces in 3-manifolds

TÜBİTAK 1001 Research Grant (2010-13) Geometric Topology Methods in Minimal Surface Theory

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor, Koç University, 2007-present

Gibbs Assistant Professor, Yale University, 2004-2007

Teaching Asst. & Instructor, Princeton University, 2001-2004

Teaching Assistant, Caltech, 1999-2001

HONORS and AWARDS

Distinguished Young Scholar Award, Turkish Academy of

Sciences, 2009

ÜAK Associate Prof. Degree, 2009

Sedat Simavi Science Award, 2009

MEMBER

American Mathematical Society

Turkish Mathematical Society



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MİNE ÇAĞLAR

Associate Professor of Mathematics

STOCHASTIC PROCESSES PROBABILITY

Ph.D. in Statistics & Operations Research, Princeton University, 1997, M.Sc. in Industrial Engineering, Bilkent University 1991, B.Sc. in Industrial Engineering, Middle East Technical University, 1989

Professor Çağlar teaches courses in mathematics; in particular, probability, stochastic processes, statistics, linear algebra, calculus and numerical analysis. Her recent research focuses on the areas of stochastic flows, mathematics of finance, data traffic and information dissemination in telecommunications.

SELECTED PUBLICATIONS

- Ö. Özkasap, M. Çağlar, E. Cem, E. Ahi, E. İskender (2009) Stepwise Fair-Share Buffering for Gossip-Based Peer-to-Peer Data Dissemination. *Computer Networks*, 53: 2259–2274.
- M. Iftikhar, T. Singh, B. Landfelt, M. Çağlar (2008) Multiclass G/M/1 queueing system with self-similar input and non-preemptive priority. *Computer Communications* 31: 1012–1027
- M. Çağlar (2007) Velocity Fields with Power-Law Spectra for Modeling Turbulent Flows. *Applied Mathematical Modelling*, 31: 1934-1946
- M. Çağlar, T. Özgökmen, L. Piterbarg (2006) Parameterization of Submeso-Scale Eddy-Rich Flows Using a Stochastic Velocity Model. *Journal of Atmospheric and Oceanic Technology*, 23: 1745-1758
- M. Çağlar (2004) A Long-Range Dependent Workload Model for Packet Data Traffic. *Mathematics of Operations Research*, 29: 92-105

GRANTS and CONSULTING

- TÜBİTAK, 2010-2012, Novel Stochastic Processes for Stock Prices and their Limits
- TÜBİTAK-NSF, 2004-2006, Stochastic Modeling of Turbulent

- Flows for the Prediction of Lagrangian Trajectories in the Ocean
- TÜBİTAK-COST 279, 2003-2005, Design and Traffic Analysis of Multicast Protocols

PROFESSIONAL EXPERIENCE

Academic

- Associate Professor of Mathematics, Koç University, 2006-Present
- Assistant Professor of Mathematics, Koç University, 1999-2006

Industry Experience

- Research Scientist, Bellcore, Network Design & Traffic Research Group, 1997-1998

HONORS and AWARDS

- Selected for Who is Who in the World, 2009
- Selected for Who is Who in Science and Engineering, 2007
- Mustafa Parlar Research Award, METU Prof. Mustafa Parlar Foundation, 2005
- Sigma Xi, The Scientific Research Society, Member since 1994

MEMBER

- The Bernoulli Society
- ISI



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ADEM LEVENT DEMİREL

Professor of Chemistry
Associate Dean of College of Sciences

SURFACES & INTERFACES

SELF-ORGANIZATION OF POLYMERS, POLYPEPTIDES
THIN FILMS
COATINGS

Ph.D. in Physics, University of Illinois, Urbana-Champaign, 1996; M.S. in Physics, University of Illinois, Urbana-Champaign, 1991; B.S. in Electrical Engineering and in Physics, Boğaziçi University, 1989

Professor Demirel teaches general chemistry; quantum mechanics (atomic & molecular structure); instrumental analysis (spectroscopy, chromatography, thermal analysis, electrochemistry, microscopy); physical chemistry and surface physical chemistry. His recent research focuses on functional surfaces and self-organization of polymers and polypeptides.

SELECTED PUBLICATIONS

M.Y. Yüce, A.L. Demirel, "The Effect of Nanoparticles on the Surface Hydrophobicity of Polystyrene", *European Physical Journal B*, Vol. 64, pp. 493-497 (2008)

A.L. Demirel, M. Meyer, H. Schlaad, "Formation of Polyamide Nanofibers by Directional Crystallization in Aqueous Solution", *Angew. Chem. Int. Ed.*, Vol. 46, pp. 8622-8624 (2007)

A.L. Demirel, S. Yurteri, I. Cianga, Y. Yagci, "Synthesis and Morphological Characterization of Poly(ϵ -caprolactone) and Poly(2-methyloxazoline) Substituted Phenyl Rings and Phenylene Oligomers", *Journal of Polymer Science Part A: Polymer Chemistry*, Vol. 45, pp. 2091-2104 (2007)

A. Kiraz, A. Kurt, M.A. Dündar, A.L. Demirel, "Simple Largely Tunable Optical Microcavity", *Appl. Phys. Lett.*, Vol. 89, 081118 (2006)

M.Y. Yüce, A.L. Demirel, F. Menzel "Tuning the Surface Hydrophobicity of Polymer/Nanoparticle Composite Films in the Wenzel Regime by Composition", *Langmuir*, Vol. 21, pp. 5073-5078 (2005)

H. Y. Erbil, A.L. Demirel, Y. Avcı, O. Mert, "Transformation of

NANO-STRUCTURED MATERIALS

FRICION
ADHESION
RHEOLOGY

a Simple Plastic into a Superhydrophobic Surface", *Science*, Vol. 299, pp. 1377-1380 (2003)

GRANTS and CONSULTING

"Interfacial Crystallization of Polypropylene", A.L. Demirel, funded by FIAT

"US-Turkey Cooperative Research: Polymer Fillers and the Role of Interfacial Rheology", A.L. Demirel and S. Granick, funded by U. S. National Science Foundation & TÜBİTAK

"Characterization of Metal Oxide Nanoparticles", Research Agreement with Degussa AG, Germany (2002-2003)

"Formation and Investigation of Superhydrophobic Surfaces having Micrometer and Nanometer Scale Roughness", A.L. Demirel and H.Y. Erbil, funded by EU-COST & TÜBİTAK (2003-2005)

"Synthesis, Characterization and Applications of Rare Earth Metal Oxide Nanoparticles", M. Somer and A. L. Demirel, funded by TÜBİTAK (2003-2005)

"PHOREMOST (Nanophotonics to realize Molecular Scale Technologies)" - Network of Excellence for EU-FP6 (successfully completed 2nd stage of evaluation in March 2004)

"Development of Magnetic Polymer-Inorganic Hybrid Materials for Optical Scanning Applications" A.L. Demirel, H.Ürey, M.Somer, F.Yağcı, A.Yalçınkaya, funded by TÜBİTAK (2005-2007)

"Diffusion of Single Molecules in Confined Geometries" A. L. Demirel, A. Kiraz, A. Kurt funded by TÜBİTAK (2007-2009)

"Multi-functional Surfaces, A. L. Demirel, Duygu Bayraktaroğlu (Arçelik) funded by TÜBİTAK (2010-2013)

PROFESSIONAL EXPERIENCE

2010-present; Associate Dean of College of Sciences
June 2008-present, Professor, Chemistry Department, Koç University

June 2004-June 2008, Associate Professor, Chemistry



Department, Koç University
September 1997-June 2004, Assistant Professor, Chemistry
Department, Koç University
May 1996-August 1997, Postdoctoral Research Associate,
FOM Institute for Atomic and Molecular Physics, Amsterdam
August 1992-May 1996, Graduate Research Assistant
Materials Research Laboratory, University of Illinois, Urbana-
Champaign
May 1990-August 1992, Graduate Research Assistant,
Coordinated Science Laboratory, University of Illinois,
Urbana-Champaign

HONORS and AWARDS

December 2006, Associate Member, Turkish Academy of
Sciences
June 2003, Koç University, Werner von Siemens Excellence
Award
January 2002, TÜBA Young Scientist Award
November 1999, Associate Professorship by Higher
Education Council
July 1999, TÜBİTAK Young Scientist Award

MEMBER

European Physical Society
European Materials Research Society



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TEKİN DERELİ

Professor of Physics

Director of Graduate School of Sciences & Engineering

QUANTUM MECHANICS

GENERAL RELATIVITY

RENORMALIZATION OF QUANTUM FIELD THEORIES

Ph.D. in Theoretical Physics, Middle East Technical University, 1976; B.S. in Physics, 1971, Middle East Technical University

Professor Dereli teaches undergraduate and graduate quantum mechanics, mathematical physics, gravitation and cosmology, physics and basic science. His recent research focuses on the areas of covariant description of electromagnetically polarizable media, rotating charged black holes in braneworld scenarios, models of dark matter with mass-varying sterile neutrinos and accelerons, gravitational waves and energy-momentum quanta, exactly solvable pairing models of interacting bosons, self-dual gauge fields in 8-dimensions

SELECTED PUBLICATIONS

Charged Relativistic Fluids And Non-linear Electrodynamics, T. Dereli and R. W. Tucker, Europhys. Lett. 89, 20009 (2010) [arXiv:1001.1282 [math-ph]]

Kerr-Taub-NUT Spacetime With Maxwell And Dilaton Fields, A. N. Aliev, H. Cebeci, T. Dereli, Phys.Rev. D 77, 124022 (2008) [arXiv:hep-th/0803.2518]

The Covariant Description Of Electromagnetically Polarizable Media, T. Dereli, J. Gratus, R. W. Tucker, Phys. Lett. A361, 190 (2007) [arXiv:math-ph/0610078], Quoted in Nature News and Views, Vol444/14 December 2006, 823

An Exact Cosmological Solution Of The Coupled Einstein-Majorana Fermion-Scalar Field Equations, A. B. Balantekin, T. Dereli, Phys. Rev. D75, 024039 (2007) [arXiv:gr-qc/0701025]

On The Energy-Momentum Density Of Gravitational Plane Waves, T. Dereli and R. W. Tucker, Class. Q. Grav. 21, 1459 (2004) [arXiv:hep-th/0401130]

PROFESSIONAL EXPERIENCE

Academic

Director of Graduate School of Sciences & Engineering (2009-Present)

GEOMETRY AND TOPOLOGY OF GAUGE FIELDS

QUATERNIONS, OCTONIONS AND CLIFFORD ALGEBRAS

SPIN STRUCTURES

Professor of Physics, Koç University (since 2001)

Professor of Mathematical Physics, Middle East Technical University, 1996-2001

Professor of Applied Mathematics, Middle East Technical University, 1993-1996

Professor of High Energy Physics, Ankara University, 1987-1993

Visiting Academic Positions

Visiting Professor, University of Wisconsin-Madison, (2004, 2005, 2006)

Leverhulme Visiting Professor, Lancaster University, (2000-2001, 2003, 2006)

Alexander von Humboldt Foundation Fellow, Karlsruhe University, (1988-1989)

Associate Member, ICTP-Trieste, (1985-1990)

SERC Research Associate, Lancaster University, (1979-1981)

Einstein-Memorial-Foundation Fellow, University of Vienna, (1977-1978)

Research Associate, Brandeis University, (1976-1977)

Visiting Scientist, Yale University, (1974-1975)

HONORS and AWARDS

1996 TÜBİTAK Science Prize

1993 Prof. Mustafa Parlar Foundation Science Prize

1989 Sedat Simavi Foundation Science Prize

1982 TÜBİTAK Junior Science Prize

MEMBER

Turkish Academy of Sciences TÜBA (since 1994)



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CORY D. DUNN

Assistant Professor of Molecular Biology and Genetics

CELL BIOLOGY GENETICS MICROBIOLOGY

Ph.D. in Cell Biology in Johns Hopkins School of Medicine, 2006; B.S. in Biology in University of Toledo, 1999

Professor Cory Dunn teaches cell biology and genetics. His recent research focuses on mitochondrial biogenesis, mitochondrial DNA, protein quality control

SELECTED PUBLICATIONS

- C.D. Dunn, Y. Tamura, H. Sesaki, and R.E. Jensen. (2008). Mgr3p and Mgr1p Are Adaptors for the Mitochondrial i-AAA Protease Complex. *Mol Biol Cell*. 19(12):5387-97
- H. Sesaki, C.D. Dunn, M. Iijima, K.A. Shepard, M.P. Yaffe, C.E. Machamer, R.E. Jensen. (2006). Ups1p, a Conserved Intermembrane Space Protein, Regulates Mitochondrial Shape and Alternative Topogenesis of Mgm1p. *J Cell Biol*. 173(5):651-8
- C.D. Dunn, M.S. Lee, F.A. Spencer, R.E. Jensen. (2006). A genomewide screen for petite-negative yeast strains yields a new subunit of the i-AAA protease complex. *Mol Biol Cell*. 17(1):213-26
- V. Everard-Gigot, C.D. Dunn, B.M. Dolan, S. Brunner, R.E. Jensen, R.A. Stuart. (2005). Functional analysis of subunit e of the yeast F1FO-ATP synthase of the yeast *Saccharomyces cerevisiae*: importance of the N-terminal membrane anchor region. *Eukaryot Cell*. 4(2):346-55
- C.D. Dunn and R.E. Jensen. (2003). Suppression of a defect in mitochondrial protein import identifies cytosolic proteins required for viability of yeast cells lacking mitochondrial DNA. *Genetics*. 165(1):35-45

PROFESSIONAL EXPERIENCE

Academic

- Assistant Professor of Molecular Biology and Genetics , Koç University (2009-present)
- Postdoctoral Associate, Howard Hughes Medical Institute/ Columbia University (2006-2009)

HONORS and AWARDS

- National Merit Scholar; National Defense, Science, and

Engineering Fellowship Program, Honorable Mention; National Defense, Science, and Engineering Fellowship Program, Honorable Mention; offered the American Cancer Society Postdoctoral Fellowship

MEMBER

- American Society for Cell Biology (2001-present)



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GÜLAYŞE İNCE DUNN

Assistant Professor of Molecular Biology and Genetics

NEUROBIOLOGY
CELL BIOLOGY
MOLECULAR BIOLOGY

Ph.D. in Neuroscience in Johns Hopkins School of Medicine, 2006; M.S. in Molecular Biology and Genetics Bilkent University, 1999; B.S. in Molecular Biology and Genetics in Boğaziçi University, 1997

Professor Dunn teaches cell biology, molecular biology, neurobiology. Her recent research focuses on neuronal gene expression regulation, neuron specific alternative splicing.

SELECTED PUBLICATIONS

P. Polleux, G. İnce-Dunn, A. Ghosh. Transcriptional regulation of axon guidance and synapse formation. (2007) Nature Neuroscience Reviews. 8(5): 331-40
G. İnce-Dunn*, B.J. Hall*, S.C Hu, B. Ripley, R.L. Haganir, J.M. Olson, S.J. Tapscott, and A. Ghosh. (2006) Regulation of thalamocortical patterning and synaptic maturation by NeuroD2. Neuron. 49(5): 683-95. (*equal contribution)
H. Aizawa, S.C. Hu, K. Bobb, K. Balakrishnan, G. İnce, I. Gurevich, M. Cowan, A. Ghosh. (2004) Dendrite development regulated by CREST, a calcium-regulated transcriptional activator. Science. 303(5655):197-202
M.B. Irmak, G. İnce, M. Ozturk, R. Cetin-Atalay. (2003) Acquired tolerance of hepatocellular carcinoma cells to selenium deficiency: a selective survival mechanism? Cancer Research. 63(20):6707-15
B.S. Sayan, G. İnce, A.E. Sayan, M. Ozturk. (2001) NAPO as a novel marker for apoptosis. J Cell Biol. 155(5):719-24

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor of Molecular Biology and Genetics at Koç University (2009-present)
Postdoctoral Associate at Rockefeller University (2006-2009)

HONORS and AWARDS

Women and Science Postdoctoral Fellowship, Rockefeller University, 2008-2009

First Place Poster Award at Graduate Student Association Poster Session, Johns Hopkins University, 2003
Fellowship for Masters study at Bilkent University, Ankara, Turkey, 1997-1999
Poster Award at "National Cancer Congress," Turkey, 1999
Travel Award from Bilkent University, Turkey, 1999
Travel Award from "Sema Yazici Youth Foundation," Turkey, 1998
Fellowship from "The International Association for the Exchange of Students for Technical Experience," 1996



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DURATA HACIU ERTEK

Instructor of Chemistry

INORGANIC SYNTHESIS (NANOSCALED PARTICLE SYNTHESIS)

PhD in Analytical Chemistry, Boğaziçi University, 1994;
M.Sc. in Chemistry, Boğaziçi University, 1986; B.Sc in
Chemistry, Boğaziçi University, 1982

Professor Hacıu teaches general chemistry to Nursing students, general chemistry, analytical chemistry and inorganic chemistry Lab courses. Her recent research focuses on synthesis and characterisation of the properties of self-standing antimicrobial films.

SELECTED PUBLICATIONS

Aguatabay, Naz M.; Tulu M.; Somer M.; Hacıu D.; Yılmaz A., "FT-Raman, FT-IR and NMR spectra, vibrational assignments and density functional studies of 1,3-bis(benzimidazol-2-yl)-2-thiapropane ligand and its Zn(II) halide complexes", *STRUCTURAL CHEMISTRY*, in press
Aghatabay, Naz M.; Somer, M.; Hacıu, D.; et al., "Synthesis, characterization and antimicrobial activity of Fe(II), Zn(II), Cd(II) and Hg(II) complexes with 2,6-bis(benzimidazol-2-yl) pyridine ligand", *EUROPEAN JOURNAL of MEDICINAL CHEMISTRY*, 2007, Feb, Vol. 42, Issue 2, 205-213
Tavman, A.; Aguatabay Naz M.; Dulger, B.; Hacıu D.; "Structural Characterization and antimicrobial activity of 2-(5-H/methyl-1H-benzimidazol-2-yl)-4-bromo/nitro-phenol ligands and their Fe(NO₃)₃ complexes", *TRANSITION METAL CHEMISTRY*, 2006, Vol. 31, 194-200
Somer, M.; Aghatabay, Naz M.; Hacıu, D.; et al.; "Crystal structure of bis[μ₂-(-3-benzimidazol-2-yl)-2-ethanethiolato-N,S,S]-chloro-palladium(II)]", *Z. KRISTALLOGR. NCS*, 2005, Vol. 220, 441-442

PROFESSIONAL EXPERIENCE

Academic

1997-present, Instructor of Chemistry, Koç University
1985-1995, Instructor of Chemistry, Boğaziçi University

Industry Experience

1995-1997, Production Manager, Ertek Yalıtım Ltd

MEMBER

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Turkish Chemical Society
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TOLGA ETGÜ

Associate Professor of Mathematics

LOW DIMENSIONAL TOPOLOGY

Ph.D. in Mathematics, University of California at Berkeley, USA, 2002; M.S. in Mathematics, Middle East Technical University, Ankara, Turkey, 1997; B.S. in Mathematics, Middle East Technical University, Ankara, Turkey, July 1994

Professor Etgü teaches mathematical analysis and topology. His recent research focuses on the areas of low dimensional topology, symplectic and contact topology, Heegaard Floer homology

SELECTED PUBLICATIONS

Elliptic open books on torus bundles over the circle, *Geometriae Dedicata*, 132 (2008), 53–63
Explicit horizontal open books on some plumbings, (with Burak Özbağcı), *International Journal of Mathematics*, 17 (2006), 1013–1031
Symplectic tori in rational elliptic surfaces, (with B. Doug Park), *Mathematische Annalen*, 334 (2006), 679–691
Lagrangian tori in homotopy elliptic surfaces, (with David McKinnon and B. Doug Park), *Transactions of the American Mathematical Society*, 357 (2005), 3757–3774
Non-isotopic symplectic tori in the same homology class, (with B. Doug Park), *Transactions of the American Mathematical Society*, 356 (2004), 3739–3750
Lefschetz fibrations, complex structures and Seifert fibrations on $S^1 \times M^3$, *Algebraic and Geometric Topology*, (2001), 469–489

GRANTS and CONSULTING

TÜBİTAK-CAREER, 2006-2009 “Topology and Geometry of 4 dimensional manifolds”

PROFESSIONAL EXPERIENCE

Academic

March 2008-present, Associate Professor of Mathematics, Koç University

September 2004-February 2008, Assistant Professor of Mathematics, Koç University

September 2002-August 2004, Postdoctoral researcher, McMaster University

Visiting Academic Positions

August 2009-May 2010, Research Member, Mathematical Sciences Research Institute

HONORS and AWARDS

TÜBİTAK Research Encouragement award, 2009

ODTÜ Parlar Foundation Research Encouragement award, 2009

Masatoshi Gunduz Ikeda Science award, 2008

TÜBA-GEBİP award, 2005

NATO Science Programme Fellowship, 1997

MEMBER

American Mathematical Society, 1997-present

Türk Matematik Derneği, 2006-present



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KAAN GÜVEN

Associate Professor of Physics

METAMATERIALS AND TRANSFORMATION OPTICS PLASMONICS, NANO-OPTICS

Ph.D. in Physics, Bilkent University, 1999; M.S. in Physics, Bilkent University, 1995; B.S. in Physics, Bilkent University, 1993

Prof. Güven teaches scientific computation, electromagnetics, solid state physics, statistical physics, general physics. Prof. Güven's research focuses on the areas of transformation optics, metamaterials, photonic crystals, plasmonic structures, involving both experimental and numerical studies. He's conducting theoretical research on many-particle interactions in low-dimensional electron systems.

SELECTED PUBLICATIONS

Kaan Güven, Elena Saenz, Ramon Gonzalo, Ekmel Özbay, and Sergei Tretyakov, "Electromagnetic cloaking with canonical spiral inclusions," *New. J. Phys.* 10, 115037 (2008)
Kaan Güven, Afif Siddiki, Phani M. Krishna, and Tuğrul Hakioglu, "A self-consistent microscopic model of Coulomb interaction in a bilayer system as an origin of Drag Effect phenomenon," *Physica E* 40, 1169 (2008)
Kaan Güven, Deniz Çalışkan, and Ekmel Özbay, "Experimental observation of left-handed transmission in a bilayer metamaterial under normal-to-plane propagation," *Optics Express* 14, 8685 (2006)
Kaan Güven, Koray Aydın, K. Bora Alici, Costas M. Soukoulis, and Ekmel Özbay, "Spectral negative refraction and focusing analysis of a two-dimensional left-handed photonic crystal lens," *Phys. Rev. B* 70, 205125 (2004)
Kaan Güven and Rolf R. Gerhardtts, "Self-consistent local equilibrium model for density profile and distribution of dissipative currents in a Hall bar under strong magnetic fields," *Phys. Rev. B* 67, 115327 (2003)

GRANTS and CONSULTING

TÜBİTAK project EEEAG-106E198 "Development and integration of compact metamaterials for wireless

CONDENSED MATTER PHYSICS SCIENTIFIC COMPUTATION

communication systems," 02.2007 – 02.2010, (Principle Investigator)

TÜBİTAK project EEEAG-106E215 "Integration of Optical Monolithic Resonators on Silicon for Photonic Communications," 09.2009 – 08.2010. (Researcher)

PROFESSIONAL EXPERIENCE

Academic

Department of Physics, Koç University, Assistant Professor, 2.2009 – present

Nanotechnology Research Center, Bilkent University, Research Associate, 10.2002 – 1.2009

Department of Von Klitzing, Max-Planck Institute, Research Associate, 10.1999 – 10.2001

Department of Physics, Bilkent University, Instructor/ 2.1997 – 9.1998

HONORS and AWARDS

TÜBA Young Scientist Award, 2008

MEMBER

Turkish Physical Society

American Physical Society



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MENDERES IŞKIN

Assistant Professor of Physics

THEORETICAL CONDENSED ATOMIC AND MOLECULAR PHYSICS

Ph.D. major in Theoretical Condensed Matter Physics, 2007;
Ph.D. minor in Theoretical Physics, Georgia Institute of
Technology, 2006; MS in Physics, Georgia Institute of
Technology, 2004; BS with high honors, Bilkent University,
2002

Professor Menderes Işkin teaches general physics, classical
mechanics, advanced electromagnetism. His recent research
focuses on theory of ultracold quantum gases in general,
quantum phases of Fermi-Hubbard and Bose-Hubbard
models and their realization in optical lattices, superfluid
properties of strongly correlated ultracold atomic Fermi
and Bose gases, quantum phase transitions and BCS-BEC
evolution through a Feshbach resonance, connection
between BCS-BEC evolution and high temperature
superconductivity, pairing in higher angular momentum
(especially p-wave and d-wave) channels, mass and/or
population imbalanced superfluidity, two-band (or multi
component) superfluidity, rotating Fermi gases, vortices
and vortex bound states in fermion superfluids, atomic
Fermi gases in lower dimensions, vortex-antivortex lattices
in two-dimensional atomic systems, quantum phases of
atomic Fermi-Bose mixtures, heteronuclear molecules with
long-ranged dipolar interactions, persistent currents in
mesoscopic and atomic systems.

SELECTED PUBLICATIONS

M. Işkin and J. K. Freericks, Strong-coupling perturbation
theory for the extended Bose-Hubbard model, *Phys. Rev. A*
79, 053634 (2009)
M. Işkin and C. J. Williams, Population imbalanced fermions
in harmonically trapped optical lattices, *Physical Review A*
78, 011603(R) (2008)
M. Işkin and C. A. R. Ş de Melo, Fermi-Fermi mixtures in the
strong attraction limit, *Physical Review A* 77, 013625 (2008)
M. Işkin and C. A. R. Ş de Melo, Two-species fermion mixtures
with population imbalance, *Physical Review Letters* 97,

100404 (2006)

M. Işkin and C. A. R. Ş de Melo, Evolution from BCS to BEC
superfluidity in p-wave Fermi gases, *Physical Review Letters*
96, 040402 (2006)

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor in Koç University, Sept 2009 - present
Joint Quantum Institute, Atomic Physics Division in
National Institute of Standards and Technology (NIST),
and Department of Physics in University of Maryland,
Gaithersburg, MD 20899-8423.

HONORS and AWARDS

Assistantships/Scholarships

Full graduate teaching/research assistantship including
tuition and monthly stipend for pursuing Ph.D. study,
School of Physics, Georgia Institute of Technology, Atlanta,
GA(2002 - 2007)

Full undergraduate scholarship including tuition and
monthly stipend for pursuing B.S study, Department of
Physics, Bilkent University, Ankara, Turkey (1997 - 2002)

Fellowships

Gilbert F. Amelio Fellowship for 'Best achievement in
research by a graduate student', School of Physics, Georgia
Institute of Technology, Atlanta, GA (2006-2007)

MEMBER

American Physical Society (APS)

Society of Physics Students (SPS)



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ALKAN KABAKÇIOĞLU

Assistant Professor of Physics

STATISTICAL PHYSICS OF COMPLEX SYSTEMS CONFORMATIONAL PROPERTIES OF (BIO)POLYMERS

PhD in Physics, Massachusetts Institute of Technology, 1999; MS in Physics, Bilkent University, 1993; BS in Electrical Engineering, Bilkent University, 1990

Professor Kabakçioğlu teaches general physics, physics of everyday life, quantum statistical physics, solid state physics, applied mathematics and numerical methods. His recent research focuses on the areas of modeling biological interactions, statistical physics of complex systems and conformational properties of biopolymers.

SELECTED PUBLICATIONS

- "Anomalies in the transcriptional regulatory network of the yeast *Saccharomyces Cerevisiae*", M. Tuğrul and A. Kabakçioğlu, *Journal of Theoretical Biology*, in press (2010)
- "Supercoil formation in DNA denaturation", A. Kabakçioğlu, E. Orlandini, and D. Mukamel, *Phys. Rev. E* 80 (1) Rapid Comm., 010903 (2009)
- "The Information Coded in the Yeast Response Elements Accounts for Most of the Topological Properties of Its Transcriptional Regulation Network", D. Balcan, A. Kabakçioğlu, M. Mungan, and A. Erzan, *PLoS ONE* 2(6): e501 (2007)
- "Percolation transition in a dynamically clustered network", A. Zen, A. Kabakçioğlu, and A.L. Stella, *Phys. Rev. E* 76, 026110 (2007)
- "Pseudoknots in a Homopolymer", A. Kabakçioğlu and A. L. Stella, *Phys. Rev. E* 70, 011802 (2004)
- "Connection-Length Optimization in Scale-Free Networks", S. S. Manna and A. Kabakçioğlu, *J. Phys. A: Math. Gen.* 36, L279-L285 (2003)
- "Statistical Properties of Contact Vectors", A. Kabakçioğlu, M. Vendruscolo, I. Kanter, and E. Domany, *Phys. Rev. E* 65, 41904 (2002)

GRANTS and CONSULTING

TBAG-106T553 (Investigation of the complete genetic

PHASE TRANSITIONS IN DISORDERED SYSTEMS MODELLING BIOLOGICAL INTERACTIONS

regulatory network of the yeast) -Principal Investigator TBAG-108T553 (Coarse-grained modeling of DNA and investigation of the plasmid structure as a function of temperature) - Investigator

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor at Koç University, Department of Physics, Jan 2005-present.

Postdoctoral fellow at the University of Padova, Department of Physics, Padova, Italy, 2002-2004

Dr. G. Picard Postdoctoral fellow at the Weizmann Institute of Science, Physics of Complex Systems, Rehovot, Israel, 1999-2000

Industry Experience

Design Scientist in InQuira.com, Los Angeles, CA, 2000-2002

MEMBER

TPS - Turkish Physical Society

APS - American Physical Society

ITAP - Inst. for Theoretical and Applied Physics - Organizing Committee



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VARGA KALANTAROV

Professor of Mathematics

PARTIAL DIFFERENTIAL EQUATIONS NONLINEAR PROBLEMS OF CONTINUUM MECHANICS

Doctor of Sciences, V.A. Steklov Institute of Mathematics, 1988; Ph.D. in Differential Equations and Mathematical Physics, Institute of Mathematics and Mechanics, Academy of Sciences of Azerbaijan, 1974, M.S. in Mathematics, Azerbaijan State University, Baku, 1971, BS in Mathematics

Professor Kalantarov teaches calculus, linear algebra, applied mathematics, real and complex analysis, applied mathematics, partial differential equations, applied functional analysis. His recent research focuses on the areas of global behavior of solutions to nonlinear evolutionary partial differential equations (global asymptotical stability and instability problems); infinite-dimensional dynamical systems generated by initial boundary value problems for nonlinear partial differential equations; control theory.

SELECTED PUBLICATIONS

Finite-Dimensional Attractors for the Strongly damped Wave Equation (with S. Zelik), *Journal of Differential Equations*, 247 (2009) 1120-1155
Gevrey regularity for the attractor of the 3D Navier-Stokes-Voigt equations (with B. Levant and E. S. Titi) *Journal of Nonlinear Science*, 19 (2009) 133 - 152
3D Convective Cahn - Hilliard Equation, (with A. Eden) *Comm. Pure Appl. Anal.* Vol.6, (2007) no.4, pp. 1075 -1086
Global solutions of coupled Kuramoto-Sivashinsky and Ginzburg-Landau equations, *Nonlinear problems in mathematical physics and related topics*, II, pp.213-227, *Int. Math. Ser. (N. Y.)*, 2, Kluwer/Plenum, New York, 2002
Attractors for the Generalized Benjamin-Bona-Mahony Equation, (With O. Celebi, M. Polat) *Journal of Differential Equations*, 1999, vol.157, pp. 439 - 451
Global behavior of solutions to some fourth-order nonlinear

DISSIPATIVE DYNAMICAL SYSTEMS

equations *Zap. Nauchn. Sem. Leningrad Otd. Mat. Inst. Steklov* 1987, v.1163, no.19, pp.6675

The occurrence of collapse for quasi-linear equations of parabolic and hyperbolic type, (with O.A. Ladyzhenskaya) *Zap. Nauchn. Sem. Leningrad Otd. Mat. Inst. Steklov* 1977

EDITORIAL BOARDS

Turkish Journal of Mathematics
Hacettepe Bulletin of Natural Sciences and Engineering, Ser.B, Mathematics and Statistics
TWMS Journal of Pure and Applied Mathematics

GRANTS and CONSULTING

Grant for the project "Initial boundary value problems for the nonlinear Schrödinger equation", TÜBİTAK, 1996 - 1997
Grant No. 106T337 "Partial Differential Equations in Phase Transitions", TÜBİTAK, 2006 -2009 (with H.M. Soner)
Grant No. 107T896 "Joint Mathematical Research Net: analysis, geometry and applications", TÜBİTAK, 2008-2011

PROFESSIONAL EXPERIENCE

Academic

September 2001 - Present Koç University,
Professor of Mathematics, Department of Mathematics
February 1993 - August 2001, Hacettepe University,
Professor of Mathematics, Department of Mathematics
September 1991 - July 1992, Baku State University,
Professor of Mathematics (part time), Department of Applied Mathematics
September 1989 - July 1991, Azerbaijan Institute of Civil Engineering Baku, Professor of Mathematics (part time), Department of Mathematics
August 1989 - February 1993, Institute of Mathematics and Mechanics, Baku, Head of Department of Partial Differential Equations
April 1984 - February 1993, Institute of Mathematics and



Mechanics, Baku, Deputy Director
February 1977-April 1984, Institute of Mathematics and
Mechanics, Baku, Senior Scientific Researcher
November 1974 –February 1977, Institute of Mathematics
and Mechanics Baku, scientific Researcher

Visiting Academic Positions

July-August 2008, Visiting Professor, University of Tennessee
February - June 2001, Research Associate, Feza Gürsey
Institute of Basic Sciences
November 1997, Visiting Professor, Weierstrass Institut für
Angewandte Analysis und Stochastic
September 1994, Visiting Professor , University Autonomia
Barcelona
September –December 1992, Visiting Professor, Gazi
University
September 1991, Visiting Professor, Universitat Politecnica
Barcelona
December 1983, Visiting Professor, K. Weierstrass Institut für
Mathematik
September 1975-May 1980, Visiting Researcher, V.A.Steklov
Institute of Mathematics

MEMBER

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Azerbaijan Mathematical Society
Turkish Mathematical Society



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ALPER KIRAZ

Associate Professor of Physics

OPTICS PHOTONICS MICRO/NANO-OPTICS

Ph. D. in Electrical and Computer Engineering, University of California, Santa Barbara, 2002; M.S. in Electrical and Computer Engineering, University of California, Santa Barbara, 2000; B.S. in Electrical-Electronics Engineering, Bilkent University, 1998

Professor Kiraz teaches general physics, classical mechanics, solid state physics, advanced electromagnetism. His recent research focuses on the areas of optical microcavities, microdroplets on a superhydrophobic surface, optical tweezers, single molecule microscopy, single molecule tracing

SELECTED PUBLICATIONS

Y. Karadag, M. Mestre, and A. Kiraz, "Photothermal self-stability and optical bistability of single NaCl-water microdroplets on a superhydrophobic surface", *Phys. Chem. Chem. Phys.* Vol. 11, 7145-7151 (2009)

M. Yorulmaz, A. Kiraz, and A. L. Demirel, "Motion of Single Terrylene Molecules in Confined Channels of Poly(butadiene)-Poly(ethylene oxide) Diblock Copolymer", *J. Phys. Chem. B* Vol. 113 (29), 9640-9643 (2009)

S. C. Yorulmaz, M. Mestre, M. Muradoglu, B. E. Alaca, and A. Kiraz, "Controlled observation of nondegenerate cavity modes in a microdroplet on a superhydrophobic surface", *Opt. Commun.* Vol. 282, 3024-3027 (2009)

Kiraz, Y. Karadag, S. C. Yorulmaz, and M. Muradoglu, "Reversible photothermal tuning of a salty water microdroplet", *Phys. Chem. Chem. Phys.* Vol. 11, 2597-2560 (2009)

Kiraz, Y. Karadağ, M. Muradoğlu, "Large spectral tuning of a water-glycerol microdroplet by a focused laser: characterization and modeling", *Phys. Chem. Chem. Phys.* Vol. 10, 6446-6454 (2008)

EDITORIAL BOARDS

Referee for: Optics Letters, Physical Review B, New Journal of Physics, Journal of Optics A: Pure and Applied Optics, Journal

OPTICAL MICROCAVITIES SINGLE MOLECULE MICROSCOPY/SPECTROSCOPY

of Physics B: Atomic, Molecular and Optical Physics, Journal of Physics D: Applied Physics, Nanotechnology

GRANTS and CONSULTING

TÜBİTAK 105T500 "Applications of High Resolution Fluorescent Microscopy in Chemistry, Biology and Photonics" (Principal Investigator)

TÜBİTAK 107T211 "Single Molecule Tracing in Confined Geometries" (Principal Investigator)

TÜBİTAK 109T734 "Ultrahigh Resolution Optical Spectroscopy of Liquid Microdroplets Standing on a Superhydrophobic Surface Using a Tapered Optical Fiber" (Principal Investigator)
DPT "Quantum Cryptology Laboratory Infrastructure Project" (Researcher)

PROFESSIONAL EXPERIENCE

Academic

2009 – Present, Associate Professor, Dept. of Physics, Koç University

2004 – 2009, Assistant Professor, Dept. of Physics, Koç University

2002 – 2004, Post-Doctoral Researcher, Dept. of Chemistry, Ludwig-Maximilians University, Munich, Germany

HONORS and AWARDS

Alexander von Humboldt Fellowship (2003)

TÜBA-GEBİP Award (2006)

Scientific and Technological Research Council of Turkey (TÜBİTAK) Encouragement Award (2008)

FABED Distinguished Young Investigator Research Award (2009)

Best Paper Award, "High Precision Size Tuning and Stabilization of Single Salt-Water Microdroplets on a Superhydrophobic Surface", A. Kiraz, M. Mestre, Y. Karadag, S. C. Yorulmaz, and M. Gundogan, Int. Symposium on Optomechatronic Technologies (ISOT), 21-23 Sep. 2009, Istanbul (2009)

MEMBER

OSA (Optical Society of America)



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SELDA KÜÇÜKÇİFÇİ

Associate Professor of Mathematics

COMBINATORICS

COMBINATORIAL DESIGN THEORY

Ph.D. in Mathematics, Auburn University, Auburn, Alabama, 2000; M.S. in Mathematics, Boğaziçi University, 1997; B.S. in Mathematics, Boğaziçi University, 1995

Professor Küçükçifçi teaches finite mathematics, calculus, multivariable calculus and linear algebra, abstract algebra, graph theory, combinatorial design theory, special topics in combinatorics. Her recent research focuses on the areas of combinatorics; combinatorial design theory, graph theory.

SELECTED PUBLICATIONS

- M. Çağlar, Ö. Özkasap, E. fi. Yazici, and S. Küçükçifçi, "An analytical framework for self-organizing peer-to-peer anti-entropy algorithms", *Performance Evaluation*, 67 (2010) 141-159
- S. Küçükçifçi, C. C. Lindner, and G. Quattrocchi, "Embeddings of P3-designs into bowtie and almost bowtie systems", *Discrete Math.*, Vol 309, Issue 18 (2009) 5675-5677
- E. J. Billington, S. Küçükçifçi, C. C. Lindner, and E. fi. Yazici, "Embedding 4-cycle systems into octagon triple systems", *Util. Math.*, 79 (2009) 99-106
- S. Küçükçifçi and G. Yüçeturk, "Maximum packing for perfect four-triple configurations", *Discrete Math.*, 308, Issues 5-6 (2008) 753-762
- S. Küçükçifçi, "The intersection problem for PBD(5*,3)s", *Discrete Math.*, 308, Issues 2-3 (2008) 382-385
- Ö. Özkasap, E. fi. Yazici, S. Küçükçifçi, and M. Çağlar, "Exact performance measures for peer-to-peer epidemic information diffusion", *Lecture Notes in Computer Science*, 4263 (2006) 866-876
- S. Küçükçifçi, C. C. Lindner, and C. A. Rodger, "A partial kite system of order n can be embedded in a kite system of order at most 8n+9", *Ars Combin.*, 79 (2006) 257-268
- S. Küçükçifçi, "The metamorphosis of $_t$ -fold block designs with block size four into a maximum packing of $_t$ Kn with kites", *Util. Math.*, 68 (2005) 165-195

GRAPH THEORY

S. Küçükçifçi, C. C. Lindner, and A. Rosa, "The metamorphosis of $_t$ -fold block designs with block size four into a maximum packing of $_t$ Kn with 4-cycles", *Discrete Math.*, 278, Issues 1-3 (2004) 175-193

S. Küçükçifçi and C. C. Lindner, "Perfect hexagon triple systems", *Discrete Math.*, 279, Issues 1-3 (2004) 325-335

S. Küçükçifçi and C. C. Lindner, "Minimum covering for hexagon triples", *Des., Codes Cryptogr.*, 32 (2004) 251-265

PROFESSIONAL EXPERIENCE

Academic

February 2007– present, Associate Professor, Koç University
September 2001–February 2007, Assistant Professor, Koç University

June 2001 – August 2001, Instructor (Summer School), Boğaziçi University

June 2000 - August 2000, January 2001 – May 2001, Post-doc, Auburn University

September 2000 – December 2000, Post-doc, Università degli Studi di Catania

September 1997 – June 2000, Graduate Teaching Assistant, Auburn University

September 1995 – June 1997, Graduate Teaching Assistant, Boğaziçi University

HONORS and AWARDS

Distinguished Young Scholar Award, Turkish Academy of Sciences (2006)

Associate Professorship by Higher Education Council (April 2005)

Merriwether Fellowship, Auburn University (1999-2000)

Graduate Dean's Award, Auburn University (1998-1999)

MEMBER

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Institute of Combinatorics and its Applications

Turkish Mathematical Society



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EMRE MENGI

Assistant Professor of Mathematics

NUMERICAL LINEAR ALGEBRA NUMERICAL OPTIMIZATION

Ph.D. in Computer Science and Applied Mathematics, Courant Institute, New York University, 2006; B.S. in Computer Engineering, Middle East Technical University, 2000

Professor Mengi teaches numerical analysis, numerical optimization, linear algebra. His recent research focuses on the optimization and perturbation theory of eigenvalues.

SELECTED PUBLICATIONS

E. Mengi, Locating a nearest matrix with an eigenvalue of prespecified multiplicity, *Numerische Mathematik*, Accepted subject to minor revision, 2009

E. Mengi, On the estimation of the distance to uncontrollability for higher order systems, *SIAM J. Mat. Anal. App.*, 30(1):154-172, 2008

D. Kressner and E. Mengi, Structure preserving eigenvalue solvers for robust stability and controllability estimates, 45th IEEE Conference on Decision and Control, 5174-5179, 2006

M.Gu, E. Mengi, M.L. Overton, J. Xia and J. Zhu, Structure preserving eigenvalue solvers for robust stability and controllability estimates, *SIAM J. Mat. Anal. App.*, 2006

E. Mengi and M.L. Overton, Algorithms for the computation of the numerical radius and the pseudospectral radius of a matrix, *IMA J. Num. Anal.*, 25(4):648-669, 2005

GRANTS and CONSULTING

TÜBİTAK – CAREER GRANT (2009), No: 109T660, Title: Optimization of symmetric eigenvalues and its applications to dynamical systems

PROFESSIONAL EXPERIENCE

Academic

2009-Present: Assistant Professor, Department of Mathematics, Koc University

Visiting Academic Positions

2006-2009: S.E.W. Assistant Professor, Department of Mathematics, University of California at San Diego

NUMERICAL ANALYSIS

HONORS and AWARDS

2008 Householder Award XIII - Honorable Mention for an outstanding dissertation in numerical linear algebra
2007 Leslie Fox Second Prize for the paper on the estimation of the distance to uncontrollability for higher order systems; Leslie Fox Prize is awarded to the researchers under the age of 30 for their contribution to numerical analysis
2007 Janet Fabri Prize - Honorable Mention Courant Institute of Mathematical Sciences, New York University for an outstanding dissertation in computer science
2004 Young Researcher Award in the First International Conference on Continuous Optimization for the paper algorithms for the computation of the pseudo spectral radius and the numerical radius of a matrix

MEMBER

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ALİ MOSTAFAZADEH

Professor of Mathematics

MATHEMATICAL PHYSICS

Ph.D. in Physics, The University of Texas at Austin, Austin, 1994; B.S. in Physics & Mathematics, Boğaziçi University, 1989

Professor Mostafazadeh teaches applied and pure mathematics and theoretical physics. His recent research focuses on the areas of differential geometric and topological methods in theoretical physics, quantum mechanics, quantum cosmology, super symmetry and its generalizations, pseudo-Hermitian Hamiltonians.

SELECTED PUBLICATIONS

- A. Mostafazadeh, "Pseudo-Hermiticity versus PT-Symmetry: The necessary condition for the reality of the spectrum of a non-Hermitian Hamiltonian," *J. Math. Phys.* 43, 205-214 (2002)
- A. Mostafazadeh, "Pseudo-Hermiticity versus PT-Symmetry III: Equivalence of pseudo-Hermiticity and the presence of antilinear symmetries," *J. Math. Phys.* 43, 3944-3951 (2002)
- A. Mostafazadeh, "Pseudo-Supersymmetric Quantum Mechanics and Isospectral Pseudo-Hermitian Hamiltonians," *Nucl. Phys. B* 640, 419-434 (2002)
- A. Mostafazadeh, "Quantum Mechanics of Klein-Gordon-Type Fields and Quantum Cosmology," *Ann. Phys. (New York)* 309, 1-48 (2004)
- A. Mostafazadeh, "Differential Realization of Pseudo-Hermiticity: A quantum mechanical analog of Einstein's field equation," *J. Math. Phys.* 47, 072103 (2006)
- A. Mostafazadeh, "Quantum Brachistochrone Problem and the Geometry of the State Space in Pseudo-Hermitian Quantum Mechanics," *Phys. Rev. Lett.* 99, 130502 (2007)
- A. Mostafazadeh, "Spectral Singularities of Complex Scattering Potentials and Infinite Reflection and Transmission Coefficients at real Energies," *Phys. Rev. Lett.*, 102, 220402 (2009)

EDITORIAL BOARDS

Member of the editorial board of the International Journal

of Geometric Methods in Modern Physics (World-Scientific) since 2004

PROFESSIONAL EXPERIENCE

Academic

- Professor, Department of Mathematics, Koç University, 2004-present
- Associate Professor, Department of Mathematics, Koç University, 1999-2004
- Assistant Professor, Department of Mathematics, Koç University, 1997-1999
- Killam Postdoctoral Fellow, Department of Physics, University of Alberta, 1996-1997
- Assistant Professor, Department of Physics, Sharif University of Technology, and Research Associate, Institute for Studies in Theoretical Physics and Mathematics (IPM), Tehran, 1995
- Killam Postdoctoral Fellow, Department of Physics, University of Alberta, June-November, 1994
- Graduate Student, Teaching and Research Assistant, Department of Physics, The University of Texas at Austin, 1989-94

HONORS and AWARDS

- Killam Postdoctoral Fellowship Award, University of Alberta, Edmonton, 1994
- Outstanding Young Scientist Award (Üstün Başarılı Genç Bilim İnsanı Ödülü) of the Turkish Academy of Sciences, 2001
- Prof. M. Parlar Research Award (Araştırma Teşvik Ödülü) of the Middle Eastern Technical University, 2001
- Werner von Siemens Excellence Award of Koç University, 2006
- Science Award in Basic Sciences (Bilim Ödülü), TÜBİTAK (The Scientific and Technological Research Council of Turkey), 2007

MEMBER

- Turkish Academy of Sciences, Principal Member
- American Mathematical Society



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ÖZGÜR MÜSTECAPLIOĞLU

Associate Professor of Physics

QUANTUM OPTICS

Ph.D. in Physics, Bilkent University, 1999, M.S. in Physics, Bilkent University, 1995, B.S. in Physics, Bilkent University, 1993

Professor Müstecaplıoğlu teaches classical mechanics, electromagnetism, statistical physics, calculus, linear algebra. His recent research focuses on the areas of quantum optics, quantum information science and technology, foundations of quantum electrodynamics, atomic, molecular and optical physics, Bose-Einstein condensates, matter waves, optical properties of semiconductors, nonlinear optics.

SELECTED PUBLICATIONS

Ö. E. Müstecaplıoğlu and M. Ö. Oktel, "Photonic Band Gap via Quantum Coherence in Vortex Lattices of Bose-Einstein Condensates", *Phys. Rev. Lett.* 94, 220404 (2005). (cover paper)

Ö. E. Müstecaplıoğlu and L. You, "Superradiant Rayleigh Scattering from Trapped Atoms", *Phys. Rev. A* 62, 063615 (2000)

S. Yi, Ö. E. Müstecaplıoğlu, C. P. Sun and L. You, "On the single mode approximation in spinor-1 condensates", *Phys. Rev. A* 66, 011601 (2002), rapid communication

A. S. Shumovsky and Ö. E. Müstecaplıoğlu, "Polarization of Dipole Radiation in Quantum Domain", *Phys. Rev. Lett.* 80, 1202 (1998)

Devrim Tarhan, Nazmi Postacioglu, and Ö. E. Müstecaplıoğlu, "Ultraslow optical waveguiding in an atomic Bose-Einstein condensate", *Optics Lett.*, 32 (9), 1038-1040 (2007)

GRANTS and CONSULTING

DPT, Quantum Cryptography Grant, (2008-2011)

TÜBİTAK, Cold Atom Physics Grant (2009-2012)

"Studies on quantum computations in macroscopic multipartite systems" Istanbul Technical University Research Grant (for co-supervising an İTÜ Ph.D student) (Istanbul Technical University-Scientific Research Project under project 31192)

PROFESSIONAL EXPERIENCE

Academic

February 2007-present, Associate Professor of Physics, Koç University

2009-2010, Guest Professor, ETH Zurich, Switzerland.

2002-February 2007, Assistant Professor of Physics, Koç University

1999-2002, Post-Doctoral Fellow, Georgia Institute of Technology

1998 Summer, Post-Doctoral Fellow in Atomic, Molecular and Optical Physics Group, University of Toronto

1993-1999, Research and Training Assistant, Department of Physics, Bilkent University

Visiting Academic Positions

August 2009-May 2010, Swiss Federal Institute of Technology (EHT)

HONORS and AWARDS

2009 Mustafa Parlar Foundation Research Award

2007 TÜBİTAK Encouragement Award

2005 Interuniversity Board – University Associate Professor (May, 2005)

Turkish Academy of Sciences, Distinguished Young Scientist (TÜBA-GEBİP) Award (2004-2007),

1995-1999 The Scientific and Technical Research Council of Turkey, Ankara, Turkey, Unified National and International Doctorate Program Fellowship

1993-1999 Bilkent University, Graduate Fellowship

1989-1993 Bilkent University, Undergraduate Fellowship

MEMBER

1995-Present Member, American Physical Society (APS)

2003-Present Member, Turkish Physical Society (TFD)

2003-Present Member, European Physical Society (EPS)

2003-Present Vice President, Optical Committee of Turkey (OCT) – (International Commission for Optics (ICO), Turkey Chapter)

2004-Present Member, The International Society of Optical Engineering (SPIE)

2006-Present Member, Optical Society of America (OSA)

2006-Present Member, Scientific Organizational Board, Institute of Theoretical and Applied Physics, Marmaris, Turkey



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BURAK ÖZBAĞCI

Associate Professor of Mathematics

LOW-DIMENSIONAL MANIFOLDS SYMPLECTIC AND CONTACT TOPOLOGY

Ph.D. in Mathematics, University of California at Irvine (UCI)
1999, B.S. in Mathematics, Middle East Technical University,
1993

Professor Özbağcı teaches mathematics. His recent research focuses on the areas of contact three manifolds, Heegaard Floer homology, symplectic four manifolds, Stein fillings, Lefschetz fibrations.

SELECTED PUBLICATIONS

Book

Surgery on contact 3-manifolds and Stein surfaces, (with A. I. Stipsicz), Bolyai Society Mathematical Studies, Vol. 13, Springer 2004

Articles

Invariants of contact structures from open books, (with J. B. Etnyre), Transactions of the American Mathematical Society 360 (6) 2008

Open books and plumbings, (with J. B. Etnyre), International Mathematics Research Notices, Article ID 72710, 2006

Signatures of Lefschetz fibrations, Pacific Journal of Mathematics, 202 (1) 2002

Lefschetz fibrations on compact Stein surfaces, (with S. Akbulut), Geometry & Topology (5) 2001

Noncomplex smooth 4-manifolds with genus-2 Lefschetz fibrations, (with A. I. Stipsicz) Proceedings of the American Mathematical Society, (128) 2000

GRANTS and CONSULTING

Marie Curie International Outgoing Fellowship 2009-2011
TÜBİTAK grant for the project titled "Topology of contact three manifolds" 2007-2011

National Science Foundation--Focused Research Group Grant, Aug 2005-May 2006

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor, Department of Mathematics,

Koç University 2002-February 2007

Associate Professor, Department of Mathematics,
Koç University February 2007-Present

Visiting Academic Positions

Mathematical Sciences Research Institute (Aug 2009-May 2010)

Georgia Institute of Technology (Aug 2005-May 2006)

Michigan State University (1999-2002)

HONORS and AWARDS

Masatoshi Gündüz Ikeda Science Award, 2008

ODTÜ M. Parlar Foundation Research Encouragement Award, 2007 Sedat Simavi Science Award 2006

TÜBİTAK-TWAS Science Award for Young Scientists in Developing Countries, 2006

Werner-von-Siemens Excellence Award (Koç University, 2005)

Outstanding Young Scientist Award and Grant by the Turkish Academy of Sciences, 2003-2006

MEMBER

American Mathematical Society



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NURHAN ÖZLÜ

Assistant Professor of Molecular Biology and Genetics

CELL BIOLOGY PROTEOMICS

Postdoctoral Research, Harvard Medical School, 2010; PhD. in Cell Biology, Dresden University of Technology, 2005; B.S., Molecular Biology and Genetics, Bilkent University, 2001

Professor Özlü teaches cell biology, molecular biology, genetics, biochemistry, proteomics. Her recent research focuses on the regulation of cell division.

SELECTED PUBLICATIONS

Özlü N, Monigatti F, Renard BY, Field CM, Steen H, Mitchison TJ, Steen JJ. Binding partner switching on microtubules and aurora-B in the mitosis to cytokinesis transition. *Mol Cell Proteomics*. 2009 Sep 28

Özlü N, Srayko M, Kinoshita K, Habermann B, O'toole ET, Muller-Reichert T, Schmalz N, Desai A, Hyman AA. An essential function of the *C. elegans* ortholog of TPX2 is to localize activated aurora A kinase to mitotic spindles. *Dev Cell*. 2005 Aug;9(2):237-48

Kurz T, Özlü N, Rudolf F, O'Rourke SM, Luke B, Hofmann K, Hyman AA, Bowerman B, Peter M. The conserved protein DCN-1/Dcn1p is required for cullin neddylation in *C. elegans* and *S. cerevisiae*. *Nature*. 2005 Jun 30;435(7046):1257-61

Pelletier L, Özlü N, Hannak E, Cowan C, Habermann B, Ruer M, Muller-Reichert T, Hyman AA. The *Caenorhabditis elegans* centrosomal protein SPD-2 is required for both pericentriolar material recruitment and centriole duplication. *Curr Biol*. 2004 May 25;14(10):863-73

Gonczy P, Echeverri C, Oegema K, Coulson A, Jones SJ, Copley RR, Duperon J, Oegema J, Brehm M, Cassin E, Hannak E, Kirkham M, Pichler S, Flohrs K, Goessen A, Leidel S, Alleaume AM, Martin C, Ozlu N, Bork P, Hyman AA.

Functional genomic analysis of cell division in *C. elegans* using RNAi of genes on chromosome III. *Nature*. 2000 Nov 16;408(6810):331-6

PROFESSIONAL EXPERIENCE

Academic

2010 September - present; Assistant Professor of Molecular Biology and Genetics in Koç University

2006 June-2010 September; Postdoctoral Research in Dr. Judith Steen Lab, Proteomics Center Children's Hospital Boston, Harvard Medical School

2006 Feb-present; Postdoctoral Research in Prof. Timothy J. Mitchison Lab., Harvard Medical School, Boston, MA

Visiting Academic Positions

Summer 2000: Research internship, European Molecular Biology Laboratory

HONORS and AWARDS

2006-2008: EMBO Long term Postdoctoral Fellowship

2005 September: Phd degree with magna cum laude.

2001-2005: Pre-doctoral Fellowship awarded by Max Planck Institute of Molecular Cell Biology and Genetics

2001 June: Graduated University as an Honor student.

1997-2001: Full scholarship awarded by Bilkent University

1997-1999: Fellowship awarded by TÜBİTAK (The Scientific and Technical Research Council of Turkey)

MEMBER

The American Society for Cell Biology (ASCB)

The American Society for Mass Spectrometry (ASMS)

European Molecular Biology Organization FellowsNet



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ALPHAN SENNAROĞLU

Professor of Physics and Electrical-Electronics Engineering
Dean of College of Sciences
Director of KUPRC



LASERS

SOLID-STATE LASERS

FEMTOSECOND LASERS

Ph.D. in Electrical Engineering, Cornell University, 1994;
MS in Electrical Engineering, Cornell University, 1990; BS in
Electrical Engineering, Cornell University, 1988

Professor Sennaroğlu teaches photonics and lasers,
photonic materials and devices, electromagnetism, classical
electrodynamics, fascinating nature of light, classical
mechanics, quantum physics, experimental physics,
quantum mechanics, and introduction to engineering. His
recent research focuses on the development of infrared
solid-state lasers, femtosecond lasers, spectroscopy of
quantum dots, doped polymers, and glasses.

SELECTED PUBLICATIONS

M. N. Cizmeciyan, H. Cankaya, A. Kurt, and A. Sennaroğlu,
'Kerr-lens mode-locked femtosecond Cr²⁺:ZnSe laser at
2420 nm,' *Opt. Lett.*, 34, 3056-3058 (2009)
U. Demirbaş, A. Sennaroğlu, F. X. Kärtner, and J. G.
Fujimoto, 'Comparative investigation of diode pumping for
continuous-wave and mode-locked Cr³⁺:LiCAF lasers,' *J.
Opt. Soc. Am. B*, 26, 64-79 (2009)
H. Kalaycioglu, H. Cankaya, G. Ozen, L. Ovecoglu, and
A. Sennaroğlu, 'Lasing at 1065 nm in bulk Nd³⁺-doped
telluride-tungstate glass,' *Opt. Commun.*, 281, 6056-6060
(2008)
S. Celebi, A. K. Erdamar, A. Sennaroğlu, A. Kurt, and H. Y.
Acar, 'Synthesis and characterization of poly (acrylic acid)
stabilized CdS quantum dots,' *J. Phys. Chem. B*, 111, 12668-
12675 (2007)
A. Sennaroğlu, A. Kiraz, M. A. Dundar, A. Kurt, and A. L.
Demirel, 'Raman lasing near 630 nm from stationary
glycerol-water microdroplets on a superhydrophobic surface,'
Opt. Lett., 32, 2197-2199 (2007)

GLASS LASERS

ULTRAFAST AND NONLINEAR OPTICS

SPECTROSCOPY

U. Demirbas and A. Sennaroğlu, 'Intracavity-pumped
Cr²⁺:ZnSe laser with ultrabroad tuning range between 1880
and 3100 nm,' *Opt. Lett.*, 31, 2293-2295 (2006)

A. Sennaroğlu, I. Kabalci, A. Kurt, U. Demirbas, and G. Ozen,
'Spectroscopic properties of Tm³⁺:TeO₂-PbF₂ glasses,' *J.
Lumin.*, 116, 79-86 (2006)

A. Sennaroğlu, A. M. Kowalevicz, E. P. Ippen, and J. G.
Fujimoto, 'Compact femtosecond lasers based on novel
multi-pass cavities,' *IEEE J. Quantum Electron.* 40, 519-528
(2004)

A. Sennaroğlu, "Broadly Tunable Cr⁴⁺-doped Solid-State
Lasers in the Near Infrared and Visible," *Prog. Quantum
Electr.* 26, 287-352 (2002)

Books

Solid-State Lasers and Applications, Alphan Sennaroğlu, Ed.,
CRC Press (Taylor and Francis Group), 2006, (ISBN:0-8493-
3589-2)

Solid-State Lasers and Amplifiers II, Alphan Sennaroğlu,
James G. Fujimoto, and Jonathan A. C. Terry, Eds.,
Proceedings of SPIE, Volume: 6190, SPIE Press, Bellingham
(2006), (ISBN: 0-8194-6246-2)

Solid-State Lasers and Amplifiers, Alphan Sennaroğlu,
Clifford R. Pollock, and James G. Fujimoto, Eds., *Proceedings
of SPIE, Volume: 5460*, SPIE Press, Bellingham (2004), (ISBN:
0-8194-5382-X)

EDITORIAL BOARDS

Technical Committee Member, Advanced Solid-State
Photonics, Denver CO, February 2009

Technical Committee Member, Advanced Solid-State
Photonics, Nara Japan, February 2008

Technical Committee Member, Ultrafast Optics, CLEO 2007

Technical Committee Member, Ultrafast Optics, CLEO 2006

Technical Committee Member, Ultrafast Optics, CLEO 2005

ALPHAN SENNAROĞLU

Technical Committee Member, Ultrafast Optics, CLEO-Europe 2005

Technical Committee Member, Europhoton Conference on Solid-State and Fiber Lasers (2004)

Member of the Organizing Committee, Turkish Workshop on Photonics (1999-2009)

GRANTS and CONSULTING

'Development of a high-energy, pulsed Cr²⁺:ZnSe laser amplifier at 2400 nm,' (Tubitak, Project TBAG 108T028, 2008-2011)

'Development of a room-temperature Fe:ZnSe laser,' (Tubitak, 2006)

'Development of Compact High-Energy Femtosecond Lasers,' (Tubitak-NSF, with Massachusetts Institute of Technology, 2005-2007)

'Infrared Micro-optics' under the Network of Excellence on Micro-optics,' (European 6th Framework Program, 2004-2008)

'Development of tunable Cr:ZnSe lasers' (Vrije University Brussels, 2004-2006)

'Investigation of eye-safe laser systems,' (Aselsan, Inc., 2004-2006)

"Synthesis and Spectroscopic Characterization of Infrared Solid-State Laser Materials" (Tubitak Project Code TBAG 2030, 2001-2004)

m solid-state μ(3) "Development of a 2.5- laser source" (Tubitak-NSF, with Cornell University 1999-2000)

"Spectroscopic Characterization of New Solid-State Visible Laser Sources Based on Upconversion Processes" (Fiat Foundation, 1998-1999)

"Design of a diode-pumped Nd:vanadate laser" (Tubitak Project Code TBAG 1543, 1996-1998)

PROFESSIONAL EXPERIENCE

Academic

Dean of College of Sciences, 2010-present

Professor, Physics and Electrical-Electronics Engineering, Koç University, November 2004-present

Associate Professor, Physics and Electrical-Electronics Engineering, Koç University, 1999-2004

Assistant Professor, Physics and Electrical-Electronics

Engineering, Koç University, 1994-1999

Visiting Academic Positions

Research Laboratory of Electronics, Massachusetts Institute of Technology, (2002-2003 and 2009-2010 academic years, and summers of 2005-2008)

Coherent Technologies, Inc., Lafayette, CO (August 2000)

Cornell University, (August 1999, August 2000)

Ben Gurion University, (September 1998)

HONORS and AWARDS

Associate Member, Turkish Academy of Sciences (2005-present)

2002 ICTP/ICO (International Commission for Optics) Award

İTÜ (Istanbul Technical University) Foundation 2001 Technology Award

Werner-von-Siemens Excellence Award (Koç University, 2001)

2001 TÜBA (Turkish Academy of Sciences) Distinguished Young Scientist Award

1998 Tubitak Young Scientist Award

Cornell Materials Science Center graduate research assistantship (1989-1994)

Sage Fellow (1988-1989 academic year)

Sibley Award of Electrical Engineering: (1988)

AMIDEAST Scholar (full undergraduate scholarship, 1984-1988)

MEMBER

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)

Member, Optical Society of America (OSA), International Society for Optical Engineering (SPIE).

Founding Chair of IEEE LEOS (Lasers and Electro-Optics Society) Turkish Chapter (1999-2003)

Vice chair, Optics Committee of Turkey (2001-2003)

Member, Eta Kappa Nu, Tau Beta Pi



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ALİ SERPENĞÜZEL

Professor of Physics

OPTOELECTRONICS PHOTONICS

Doctor of Philosophy in Applied Physics, Yale University, 1992
Bachelor of Science in Electrical Engineering & Physics,
Boğaziçi University, 1987

Professor Serpengüzel teaches introduction to mechanics, electromagnetism, experimental physics, optical spectroscopy, optical microresonators and microcavities, optical and electronic properties of materials, and solid state physics. His recent research in optoelectronics and photonics focuses on microsphere based optoelectronic devices using optical microresonators and microcavities, photonic atoms, silicon photonics, and liquid crystals.

SELECTED PUBLICATIONS

- A. Serpengüzel and A. Demir, "Silicon microspheres for near-IR communication applications," *Semicond. Sci. Technol.* 23, 064009 (2008)
- A. Serpengüzel, A. Kurt, and U.K. Ayaz, "Silicon microspheres for electronic and photonic integration," *Photon. Nanostructur.: Fundam. Appl.* 6, 179–182 (2008)
- A. Serpengüzel, A. Kurt, I. Inanç, J. E. Carey, and E. Mazur, "Luminescence of Black Silicon," *J. Nanophoton.* 2, 021770 (2008)
- C. Dinç, I. Lazoglu, and A. Serpengüzel, "Analysis of Thermal Fields in Orthogonal Machining with Infrared Imaging," *J. Mater. Process. Technol.* 198, 147-154 (2008)
- E. Yüce, O. Gürlü, and A. Serpengüzel, "Optical Modulation with Silicon Microspheres," *IEEE Photon. Technol. Lett.*, 21, 1481-1483 (2009)
- G. Gilardi, D. Donisi, A. Serpengüzel, and R. Beccherelli, "Liquid-crystal tunable filter based on sapphire microspheres," *Opt. Lett.* 34, 3253-3255 (2009)

EDITORIAL BOARDS

Optics and Photonics News, Optical Society of America (OSA),

District of Columbia, USA (2007-present)

Proceedings on Photonics Materials, Devices, and Applications, Society of Photo-Optical Instrumentation Engineers (SPIE), Washington, USA (2005-present)

Int. J. Modern Physics B, *Modern Phys. Lett. B*, World Scientific Press, Singapore (2008-present)

GRANTS and CONSULTING

Grants

The European Office of Aerospace Research and Development, London, UK (2009-2010), FA8655-09-1-5062: "Conference on Photonics Materials, Devices, and Applications III"

The Scientific and Technical Research Council of Turkey, Ankara, Turkey (2007-2010), EEEAG-106E215, "Integration of Optical Monolithic Resonators on Silicon for Photonic Communications"

The European Office of Aerospace Research and Development, London, UK (2006-2007), FA8655-07-1-5013: "Conference on Photonics Materials, Devices, and Applications II"

The European Commission, Brussels, Belgium, (2004-2008), FP6-IST 511616: "Network of Excellence NanoPHotonics to REalization of MOlecular Scale Technologies (PHOREMOST)"

The European Commission, Brussels, Belgium, (2004-2008), FP6-IST 003887: "Network of Excellence on Micro Optics (NEMO)"

The European Office of Aerospace Research and Development, London, UK (2002-2003), FA8655-02-M4086: "Amorphous, porous, & black silicon for photonic applications"

The European Office of Aerospace Research and Development, London, UK (2001-2002), F61775-01-WE062: "Amorphous silicon photonic microcavities"

The Scientific and Technical Research Council of Turkey,



ALİ SERPENGÜZEL

Ankara, Turkey (2001-2003), MISAG-193: "Investigation of the tool, workpiece and chip temperatures in computer numerical control machine tools by a high resolution infrared thermal camera"

The Scientific and Technical Research Council of Turkey, Ankara, Turkey (2000-2002), TBAG-1952: "Silicon based photonic materials and microdevices"

The North Atlantic Treaty Organization, Brussels, Belgium (1999-2004), SfP-971970: "Integrated optoelectronic circuits for IR wavelength telecommunication"

The British Council, Ankara, Turkey (1997-2000), Glasgow University Academic Link: "Semiconductor Photonic Microdevices"

Consulting

Austrian NANO Initiative, Austrian Research Promotion Agency (FFG), Vienna, Austria (2005-present)

University Grants Committee, Research Grants Council (CERG), Hong Kong, China (2006-present)

Natural Sciences Research Group, Scientific and Technical Research Council of Turkey (TÜBİTAK), Ankara, Turkey (1995-present)

Electrical and Electronics Engineering Research Group, Scientific and Technical Research Council of Turkey (TÜBİTAK), Ankara, Turkey (2009-present)

PROFESSIONAL EXPERIENCE

Academic

Professor of Physics, Koç University, 2006-present,

Associate Professor of Physics, Koç University, 2001- 2006

Assistant Professor of Physics, Bilkent University, 1995-1999

Postdoctoral Research Associate, Polytechnic University, 1994-1995

Research Associate, Yale University, 1992-1994

Visiting Academic Positions

Visiting Professor - Koç Scholar, Harvard University, Summer 2001, Summer 2004

Industry Experience

Consultant, Texaco, Research Center, Laser Research Laboratory, New York, 1991-1994

HONORS and AWARDS

Fellow, Society of Photo-Optical Instrumentation Engineers (SPIE), Washington, USA, December 2006

Werner von Siemens Excellence Award for Science and Innovation, June 2002

Senior Member, Institute of Electrical and Electronics Engineers (IEEE), New Jersey, USA, October 2000

University Associate Professor of Turkey, Interuniversity Board, Ankara, Turkey, November 1996

MEMBER

American Association of Aerosol Research (AAAR), Ohio, USA

American Physical Society (APS), Maryland, USA

European Optical Society (EOS), Hannover, Germany

European Physical Society (EPS), Mulhouse, France (Turkish National Representative)

Institute of Electrical and Electronics Engineers (IEEE), New Jersey, USA (Senior Member)

IEEE Photonics Society (PS), Turkey Chapter (Past-Vice-President, Founding Member)

Materials Research Society (MRS), Pennsylvania, USA

Optical Committee of Turkey (OCT), Ankara, Turkey (Past-President, Founding Member)

Optical Society of America (OSA), District of Columbia, USA (Active)

Sigma Xi (SX), The Scientific Research Society, North Carolina, USA

Societe Française d'Optique (SFO), Orsay, France

Society of Automotive Engineers (SAE), Pennsylvania, USA

Society of Photo-Optical Instrumentation Engineers (SPIE),

Washington, USA (Fellow)



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MEHMET SUAT SOMER

Professor of Chemistry

SYNTHESIS AND CHARACTERIZATION OF: TERNARY BORONNITRIDES, POLAR INTERMETALLIC COMPOUNDS (ZINTL PHASES), CLUSTER COMPOUNDS, NANO AND MESO SCALED RARE EARTH OXIDES, SOLID HYDROGEN STORAGE MATERIALS
AREAS OF SOLID STATE CHEMISTRY
VIBRATIONAL SPECTROSCOPY

SYNTHESIS METHODS: HIGH TEMPERATURE SYNTHESIS (UP TO 1500 C), HYDROTHERMAL SYNTHESIS, SYNTHESIS IN LIQUID AMMONIA, SOL-GEL PROCESSES
CHARACTERIZATION METHODS: XRD FOR POWDER AND SINGLE CRYSTALS, FT RAMAN SPECTROSCOPY, FT-IR/FIR SPECTROSCOPY (4000-100 CM⁻¹), THERMAL ANALYSIS (DTA/TG)

PhD in Inorganic Chemistry, Technical University of Clausthal, 1979, MS in Chemistry, Technical University of Clausthal, Germany, 1974

Professor Somer teaches inorganic chemistry, analytic chemistry, science lecture, solid state chemistry, symmetry and vibrational spectroscopy, structure of materials, vibrational spectroscopy. His recent research focuses on the areas of synthesis and characterization of: ternary boron nitrides, polar intermetallic compounds (zintl phases), cluster compounds, nano and meso scaled rare earth oxides, solid hydrogen storage materials.

SELECTED PUBLICATIONS

Na₁₂Ge₁₇: A Compound with the Zintl Anions [Ge₄]⁴⁻ and [Ge₉]⁴⁻: Synthesis, Crystal Structure and Raman Spectra, W. Carrillo-Cabrera, R. Cardoso Gil, M. Somer, Ö. Persil and H. G. von Schnering *Anorg. Allg. Chem.* 629, 601-608, 2003
Ca₂[BN₂]H : The First Nitrido-Borate Hydride-Synthesis, Crystal Structure and Vibrational Spectra M. Somer, Ö. Yaren, O. Reckeweg, Y. Prots, W. Carrillo-Cabrera, *Z. Anorg. Allg. Chem.*, 630, 1068, 2004
Nitridoberyllates of the Heavier Alkaline-Earth Metals, M. Somer, A. Yarasik, L. Akselrud, S. Leoni, H. Rosner, W. Schnelle, R. Kniep, *Angew. Chem.* 116, 1108-1112, 2004; *Angew. Chem. Int. Ed. Engl.*, 43, 1088-1092, 2004
Vibrational spectra of compounds with the cluster anions [E₄]ⁿ⁻ : M₄E₄ (M = K, Rb, Cs; E = Ge, Sn) and beta-Na₄Sn₄, M. Somer, U. Aydemir, M. Baitinger, H.G. von Schnering *Z. Anorg. Allg. Chem.* 632, 1281, 2006, _ Clusters --5)
Cs₄Ge₉-en: A Novel Compound with [Ge₉]⁴⁻ Synthesis, Crystal Structure and Vibrational Spectra, W. Carrillo-

Cabrera, U. Aydemir, M. Somer, A. Kircali, T. F. Fässler, S.D. Hoffmann

Z. Anorg. Allg. Chem. 633, 1575, 2007

PROFESSIONAL EXPERIENCE

Academic

November 2004-present, Professor, Koç University
1998-November 2004, Associate Professor, Koç University
1994-1998, Privat Dozent at the Technical University of Clausthal
1988-1997, Research in the working group of Prof. Dr. H. G. v. Schnering at the Max-Planck-Institute Stuttgart, Solid State Physics and Chemistry Dep.

MEMBER

Gesellschaft Deutscher Chemiker (GDCh)



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ALİ ÜLGER

Professor of Mathematics

FUNCTIONAL ANALYSIS

Ph.D. in Nonlinear Analysis, at University of Besançon, 1976; M. S. in Nonlinear Analysis, University of Besançon, 1973; B.S. in Mathematics, University of Besançon, 1972

Professor Ülger teaches analysis. His recent research focuses on the areas of abstract harmonic analysis, Banach algebras, geometry of Banach spaces.

SELECTED PUBLICATIONS

Weak compactness in $L_1(m, X)$, Proc. Amer. Math. Soc. 113 (1991), 143-149

Continuous linear operators on $C(K, X)$ and pointwise weakly precompact subsets of $C(K, X)$, Math. Proc. Camb. Phil. Soc. 111 (1992), 143-150

(Jointly with To-Ming Lau) Some geometric properties on the Fourier and Fourier-Stieljes algebras of locally compact groups, Arens regularity and related problems, Trans. Amer. Math. Soc. 348 (1993), 321-359

Some results about the spectrum of commutative Banach algebras under weak topology and applications, Monatshefte für Math. 121 (1996), 353-379

A characterization of the closed unitals of the Fourier-Stieljes algebra $B(G)$ of a locally compact amenable group G . Jour. Functional Analysis, 205 (2003), 90-106

PROFESSIONAL EXPERIENCE

Academic

1978-79: Assistant Professor of Mathematics, Hacettepe University

1979-1983: Assistant Professor of Mathematics, Boğaziçi University

1983-1988: Associate Professor of Mathematics, Boğaziçi University

1988-1996: Professor of Mathematics, Boğaziçi University

1996- present: Professor of Mathematics, Koç University.

Visiting Academic Positions

1992-1993 Visiting Professor, Bilkent University

1989-1990 Visiting Professor, Arkansas State University

HONORS and AWARDS

1988 Sedat Simavi Vakfı Science Price

1995 TÜBİTAK Science Price

MEMBER

Member of The Turkish Academy of Sciences (1977)

Turkish Mathematical Society (Vice President)

American Mathematical Society.



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UĞUR ÜNAL

Assistant Professor of Chemistry

SOLID STATE CHEMISTRY LAYERED OXIDE MATERIALS

Ph.D. in Applied Chemistry and Biochemistry, Kumamoto University, Japan, 2004; M.Sc. Materials Science and Engineering, İzmir Institute of Technology, 1999; B.Sc. in Chemical Engineering, Ege University, 1996

Professor Ünal's teaching interests are inorganic chemistry and electrochemistry. His research interests are inorganic layered materials and their applications in electrochemical, photochemical and catalytic applications. He is also interested in the synthesis of the advanced ceramics.

SELECTED PUBLICATIONS

Author of a chapter "Semiconductor Layered Oxides: Synthesis, Properties and Applications" in a book entitled "Progress in Solid State Chemistry Research" published by Nova Science Publisher, Inc., Editor: Ronald W. Buckley, 2006

Uğur Ünal, Dan Matsuo, Yasumichi Matsumoto, and Michio Koinuma, Thermally-induced Phase Changes in Electrophoretically Deposited Titanate and Niobate Layered Oxides" Journal of Materials Research, Vol. 17, No 10, 2644-2651, October 2002

Uğur Ünal, Yasumichi Matsumoto, Noriyuki Tanaka, Yoshitaka Kimura, and Naoko Tamoto "Electrostatic Self-Assembly Deposition of Titanate (IV) Layered Oxides Intercalated with Transition Metal Complexes and Their Electrochemical Properties" Journal of Physical Chemistry B, Vol. 107, No. 46, 12680-12689, 2003

Uğur Ünal, Yasumichi Matsumoto, Naoko Tamoto, Michio Koinuma, Masato Machida, Kazuyoshi Izawa "Visible Light Photoelectrochemical Activity of K₄Nb₆O₁₇ Intercalated with Photoactive Complexes by Electrostatic Self-assembly Deposition" Journal of Solid State Chemistry 179 (2006) 33-40

Uğur Ünal, Shintaro Ida, Kenji Shimogawa, Ozge Altuntasoglu, Kazuyoshi Izawa, Chikako Ogata, Taishi Inoue and Yasumichi Matsumoto, "Electrochemical behavior of Ag⁺ intercalated layered oxides", Journal of

ELECTROCHEMISTRY PHOTOCHEMISTRY

Electroanalytical Chemistry, 595 (2006) 95-102
Ozge Altuntasoglu, Ugur Unal, Shintaro Ida, Motonobu Goto, Yasumichi Matsumoto, "Characterization of self-assembled films of NiGa layered double hydroxide nanosheets and their electrochemical properties" Journal of Solid State Chemistry, 181,(2008), 3257-3263

PROFESSIONAL EXPERIENCE

Academic

Assistant Professor of Chemistry, January 2008-present
Japan Society for the Promotion of Science Fellow, Kumamoto University, October 2005-January 2008
Teaching Assistant, İzmir Institute of Technology İzmir, 1999-2001

Graduate Research Assistant, İzmir Institute of Technology İzmir, 1996-1999

Visiting Academic Positions

Assistant Kumamoto University, Visiting Researcher
October 2004 – September 2005

HONORS and AWARDS

Monbukagakusho Scholarship by Japanese Government, 2001-2004

Japanese Society for the Promotion of Science, 2005-2007

Who is Who in Science and Engineering, 2006-2009

Who is Who in Asia, 2006-2009

MEMBER

The Electrochemical Society of Japan

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SINAN ÜNVER

Assistant Professor of Mathematics

MATHEMATICS

PhD. in Mathematics, University of California-Berkeley, 2003; BSc. in Mathematics, Middle East Technical University, 1997

Professor Ünver teaches Mathematics. His recent research focuses on the areas of arithmetical algebraic geometry, more specifically: p -adic multi-zeta values; polylogarithms; motivic fundamental groups of curves; geometric ramification theory; Arakelov geometry.

SELECTED PUBLICATIONS

p -adic multi-zeta values. Journal of Number Theory 108, p. 111-156, (2004)

An Arakelov theoretic proof of the equality of conductor and discriminant. Journal de Theorie des Nombres de Bordeaux no.2 60, p. 423-427, (2004)

On the local unipotent fundamental group scheme. To appear in Canadian Mathematical Bulletin Additive polylogarithms and their functional equations. To appear in Mathematische Annalen.

Swan conductors and torsion in the logarithmic de Rham complex. To appear in Turkish Journal of Mathematics.

On the additive dilogarithm. Algebra and Number Theory 3 (2009), p. 1-34

On the purely irregular fundamental group. To appear in Mathematische Nachrichten Drinfel'd-Ihara relations for the crystalline Frobenius

PROFESSIONAL EXPERIENCE

Academic

Fall 2006-present, Assistant Professor of Mathematics, Koç University

Fall 2003-2006, L. E. Dickson instructor. Department of Mathematics, University of Chicago

Visiting Academic Positions

Summer, 2004, IHES, Bures-sur-Yvette, France

HONORS and AWARDS

Charles B. Morrey Jr. Prize, 1999 (Berkeley Mathematics Department Prize)



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EMİNE ŞULE YAZICI

Assistant Professor of Mathematics

COMBINATORICS DESIGN THEORY

Phd. Auburn University Discrete and Statistical Sciences Department, 2003; B.Sc. Boğaziçi University Mathematics Department, 2000

Professor Yazıcı teaches abstract mathematics and algebra. Her recent research focuses on the areas of combinatorics, design theory and computational mathematics.

SELECTED PUBLICATIONS

- E. Billington, C. C. Lindner and E. Ş. Yazıcı, "The triangle intersection problem for $K_4 - e$ designs", *Utilitas Mathematica*, 73 (2007), 3-21
- Öznur Özkasap, E. Ş. Yazıcı, Selda Küçükçifçi and Mine Çağlar, "Exact Performance Measures for peer-to-peer Epidemic Information Diffusion", *Lecture Notes in Computer Science*, Springer Verlag, 4263 (2006), pp.866-876
- Nicholas J. Cavenagh, Diane M. Donovan and Emine Şule Yazıcı, "Homogeneous trades in latin squares, *Discrete Math.* 306 (2006), no. 17, 2047-2055
- E. Ş. Yazıcı, "Metamorphism problem of 2-fold 4-cycle systems into maximum packings of 2-fold 6-cycle systems", *Australas. J. Combin.*, 32 (2005), 331- 338
- C. C. Lindner and E. Ş. Yazıcı, "The triangle intersection problem for kite systems", *Ars Combinatoria*, 75 (2005), 225-231

GRANTS and CONSULTING

TÜBİTAK CAREER "A Secret Sharing Method: Defining sets in combinatorial designs" (2007-2009)

PROFESSIONAL EXPERIENCE

Academic

- Assistant Professor of Mathematics, Sep 2005-present, Koç University
- Post-Doctoral Research Fellow, July 2004- Jun 2005, University of Queensland, Australia
- Post Doctoral Position, August 2003- May 2004, Auburn University, Auburn, AL, USA

COMPUTATIONAL MATHEMATICS

Graduate Teaching Assistant, Aug 2000-Aug 2003, Auburn University, Auburn, AL, USA

HONORS and AWARDS

Ethel Raybould Visiting Academic Fellowship of 2007, The University Of Queensland

MEMBER

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POLYMER SCIENCE AND TECHNOLOGY: POLYMER SYNTHESIS, CHARACTERIZATION, MODIFICATION AND PROCESSING FROM LABORATORY SCALE R&D TO COMMERCIAL SCALE

PRODUCTION AND APPLICATIONS DEVELOPMENT

B.S. in Chemical Engineering, Middle East Technical University, 1979

Emel Yilgör teaches physical chemistry, organic chemistry and graduate program polymer laboratories.

She also coordinates and supervises polymer research laboratories. Her expertise and recent research focuses on structural, thermal and physicochemical characterization of reactive oligomers and polymers, utilization of reactive oligomers for the preparation block and segmented multiphase copolymers, process optimization and scale-up for the production of specialty, solvent-based polyurethanes, investigation of the structure-property relationships of multiphase polymers, melt processing, compounding and modification of thermoplastic polymers in a twin-screw extruder. Process development for direct polymerization using a twin-screw extruder, investigating of the influence of hydrogen bonding on the thermal and mechanical behavior of polymeric materials, preparation and characterization of antibacterial polymeric systems and composites, electrospinning of polymeric biomaterials, synthesis and characterization of hyperbranched polymers through step-growth polymerization

SELECTED PUBLICATIONS

“Hydrophilic Polyurethaneurea Membranes: Influence of Chemical Composition on the Water Vapor Permeation Rates”, İ. Yilgör and E. Yilgör, *Polymer*, 40(20), 5575-5581 (1999)

“Hydrogen Bonding: A Critical Parameter in Designing Silicone Copolymers”, Emel Yilgör and Iskender Yilgör, *Polymer*, 42(19), 7953-7959 (2001)

“Electrospinning of Polyurethane Fibers”, M. M. Demir, İ.

Yilgör, E. Yilgör and B. Erman, *Polymer*, 43(11), 3303-3309 (2002)

“Surface properties of polyamides modified with reactive polydimethylsiloxane oligomers and copolymers”, E. Yilgör, İ. Yilgör and S. Suzer, *Polymer*, 44(24), 7271-7279 (2003)

“A new generation of highly branched polymers: Hyperbranched, segmented polyurethaneurea elastomers”, S. Unal, İ. Yilgör, E. Yilgör, J. P. Sheth, G. L. Wilkes and T. E. Long, *Macromolecules*, 37(19), 7081-7083 (2004)

“Structure-morphology-property behavior of segmented thermoplastic polyurethanes and polyureas prepared without chain extenders”, İ. Yilgör and E. Yilgör, *Polymer Reviews*, 47(4), 487-510 (2007)

“Informal undergraduate polymer research program at Koç University Chemistry Department” İ. Yilgör and E. Yilgör, *Polymer Reviews*, 48(4), 633-641 (2008)

“Time dependent morphology development in segmented polyetherurea copolymers based on aromatic diisocyanates”, İ. Yilgör, E. Yilgör, S. Das and G. L. Wilkes, *J. Polymer Sci., Polymer Physics*, 47(5), 471-483 (2009)

“Polyisobutylene-Based Segmented Copolymers. 1. Synthesis of Hydrolytically and Oxidatively Stable Polyureas” Suresh K. Jewrajka, Emel Yilgör, İskender Yilgör and Joseph P. Kennedy, *J. Polymer Sci., Polymer Chemistry*, 47(1), 38-48 (2009)

GRANTS and CONSULTING

MSB – Development of waterproof, moisture vapor permeable membranes and coated fabrics

FIAT – Development of directly paintable polyolefins

NYLSTAR – Development of permanently water repellent polyamide fibers

STEVENS INST. TECH. – Analysis of medical polyurethanes

WACKER CHEMIE – Preparation of high performance silicone-urea copolymers



PROCTER and GAMBLE COMPANY – Development of novel additives for fabric treatment

E. Yilgör has been a consultant to various international companies on polymer science and technology

PATENTS

Waterproof, Moisture Vapor Permeable Polymers, Films and Textile Coatings”, I. Yilgör and E. Yilgör, US Patent 5,389,430 (February 14, 1995), (to Th. Goldschmidt AG)

“Waterproof, Moisture Vapor Permeable Polyurethaneurea Polymer Comprising Polycaprolactone and Polydimethylsiloxane Soft Segments”, I. Yilgör and E. Yilgör, US Patent 5,461,122 (October 24, 1995) (to Th. Goldschmidt AG)

“Waterproof, Moisture Vapor Permeable Polymers, Films and Coated Textiles and Other Materials”, I. Yilgör and E. Yilgör, US Patent 5,521,273 (May 28, 1996), (to Th. Goldschmidt AG)

“Segmented urea and siloxane copolymers and their preparation methods”, I. Yilgör, E. Yilgör, G. L. Wilkes and J. P. Sheth, US Patent 7,262,260 B2 (Virginia Tech Intellectual Properties) (August 28, 2007)

PROFESSIONAL EXPERIENCE

Academic

October, 1994 – Present Instructor, Koc University
July 1980 - August 1985 Research Specialist, Virginia Polytechnic Institute and State University Blacksburg

Industrial Experience

Jan. 1989 - October 1994 Manager, Process Development, Goldschmidt Chemical Corporation Hopewell

July 1987 - January 1989 Production Manager, Polymer Division, Thoratec Laboratories Corporation Berkeley

August 1985 - July 1987 Associate Scientist, Mercor Incorporated Berkeley

May 1979 - March 1980 Chemical Engineer, Kurt&Kurt AŞ

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İSKENDER YILGÖR

Professor of Polymer Chemistry
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POLYMER SCIENCE AND TECHNOLOGY POLYMER SYNTHESIS, CHARACTERIZATION, MODIFICATION AND PROCESSING

Ph.D. in Chemistry, Middle East Technical University (METU), 1977, M. S. in Chemistry, Middle East Technical University (METU), 1974, B. S. in Chemistry, Middle East Technical University (METU), 1972

Professor Yilgör teaches general chemistry, organic chemistry, polymer chemistry, energy and environment, properties of polymers and composites and a special elective course entitled: Science, Innovation and Technology. His recent research focuses on: synthesis and characterization of self-healing elastomers, shape-memory elastomers, preparation and characterization of elastomeric nanocomposites, investigation of hydrogen bonding in polymers and other supramolecular systems, polymeric biomaterials, antimicrobial coatings and wound dressings, design, synthesis and characterization of linear and hyperbranched segmented elastomers, investigation of the structure-property relationships of multiphase polymers.

SELECTED PUBLICATIONS

Polysiloxane Containing Copolymers: A Survey of Recent Developments İ. Yilgör and J. E. McGrath, *Advances in Polymer Science*, Vol. 86, 1-87 (1988)
Chemical Modification of Matrix Resin Networks with Engineering Thermoplastics: I. Synthesis, Morphology, Physical Behavior and Toughening Mechanisms of Poly (arylene ether sulfone) modified Epoxy Networks J. L. Hedrick, İ. Yilgör, M. Jurek, J. C. Hedrick, G. L. Wilkes and J. E. McGrath, *Polymer*, 32, 2020-2032 (1991)
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Hydrogen bonding and polyurethane morphology I. Quantum mechanical calculations of hydrogen bond energies and vibrational spectroscopy of model compounds, E. Yilgör, İ. Yilgör and E. Yurtsever, *Polymer*, 43(24), 6551-6559 (2002)

FROM LABORATORY SCALE R&D TO COMMERCIAL PRODUCTION AND APPLICATIONS DEVELOPMENT

A new generation of highly branched polymers: Hyperbranched, segmented polyurethaneurea elastomers S. Unal, İ. Yilgör, E. Yilgör, J. P. Sheth, G. L. Wilkes and T. E. Long, *Macromolecules*, 37(19), 7081-7083 (2004)
Structure-morphology-property behavior of segmented thermoplastic polyurethanes and polyureas prepared without chain extenders, I. Yilgör and E. Yilgör, *Polymer Reviews*, 47(4), 487-510 (2007)
Influence of polymerization procedure on polymer topology and other structural properties in highly branched polymers obtained by A2+B3 approach, C. Oguz, M. A. Gallivan, S. Cakir, E. Yilgör and I. Yilgör, *Polymer*, 49(5), 1414-1424 (2008)

GRANTS and CONSULTING

MSB – Development of waterproof, moisture vapor permeable membranes and coated fabrics
FIAT – Development of directly paintable polyolefins
NYLSTAR – Development of permanently water repellent polyamide fibers
STEVENS INST. TECH. – Analysis of medical polyurethanes
TÜBİTAK – Preparation and structure-property behavior of hyperbranched polyurea elastomers
WACKER CHEMIE – Synthesis and characterization of silicone-urea copolymers
PROCTER and GAMBLE COMPANY – Development of novel additives for fabric treatment
Prof. Yilgör is technical consultant to several major US and European Companies.

PATENTS

“Polysiloxane/Poly(Oxazoline) Copolymers”, J. S. Riffle and İ. Yilgör, US Patent 4,659,777 (Thoratec Laboratories Corp.) (April 21, 1987)
“Hydroxyl-Functional Disiloxanes and Polysiloxane Oligomers”, J. S. Riffle and İ. Yilgör, US Patent 4,689,383 (Thoratec Laboratories Corp.) (August 25, 1987)
“Waterproof, Moisture Vapor Permeable Polymers, Films and



Textile Coatings”, İ. Yilgör and E. Yilgör, US Patent 5,389,430 (Th. Goldschmidt AG) (February 14, 1995)

“Waterproof, Moisture Vapor Permeable Polyurethaneurea Polymer Comprising Polycaprolactone and Polydimethylsiloxane Soft Segments”, İ. Yilgör and E. Yilgör US Patent 5,461,122 (Th. Goldschmidt AG) (October 24, 1995)

“Waterproof, Moisture Vapor Permeable Polymers, Films and Coated Textiles and Other Materials”, İ. Yilgör and E. Yilgör, US Patent 5,521,273 (May 28, 1996)

“Additives for Paintable and Printable Polyolefin Compositions”, R. Spiegler, İ. Yilgör and G. Koerner, European Patent, EP 0 662 496 A2 (Th. Goldschmidt AG) (July 12, 1995)

“Segmented urea and siloxane copolymers and their preparation methods”, İ. Yilgör, E. Yilgör, G. L. Wilkes and J. P. Sheth, US Patent 7,262,260 B2 (Virginia Tech Intellect. Prop.) (August 28, 2007)

PROFESSIONAL EXPERIENCE

Academic Experience

2010 - present Director, KUYTAM Koç University

October, 1996 – Present Professor of Chemistry, Koç University

October, 1994 – October 1996 Associate Professor of Chemistry, Koç University

January 1983 – August 1985 Director of Polymer Laboratories, VPI&SU Blacksburg

April 1980 – January 1983 Research Associate, VPI&SU, Blacksburg

March 1979 – September 1982 Assistant Professor, Chemistry Department, METU

March 1978 – March 1979 Instructor, Chemistry Department, METU

November 1972 – March 1978 Teaching Assistant, Chemistry Department, METU

Visiting Academic Positions

August 1988 Caulfield Inst. Tech., Melbourne

July - September 1997 EPFL, Lausanne

October 2003 – October 2004 Virginia Tech, Blacksburg

Industrial Experience

January 1989 – October 1994 Vice President R&D, Goldschmidt Chem. Corp., Hopewell,

August 1985 – January 1989 Vice President and Director, Thoratec Labs. Corp., Berkeley,

HONORS and AWARDS

Member of TÜBİTAK Science Board, 2009 - Present

Editorial Board Member of SILICON, 2009 - Present

TÜBİTAK Achievement Award in Science (Bilim Ödülü), 2003

Siemens Award for Excellence in Science and Technology, 2000

EPFL, Lausanne, CH, Invited Professor, 1997

Australian Government Scholarship, Visiting Professor, Melbourne, 1988

MEMBER

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ERSİN YURTSEVER

Professor of Chemistry

THEORETICAL CHEMISTRY

QUANTUM CHEMISTRY

Ph.D. in Chemistry, Virginia Commonwealth University, 1976; M. S. in Theoretical Chemistry, Middle East Technical University, 1973; B. S. in Chemistry, Middle East Technical University, 1971

Professor Yurtsever teaches quantum chemistry, thermodynamics, statistical thermodynamics. His recent research focuses on the areas of dynamics and thermodynamics of clusters, quantum mechanical calculations of chemical bonding.

SELECTED PUBLICATIONS

- E.Yurtsever, "π-stack dimers of small polyaromatic hydrocarbons: A path to the packing of graphenes", J. Phys. Chem.A 113, 924 (2009)
- S. Bovino, E. Bodo, E. Yurtsever and F.A.Gianturco, "Vibrational cooling of spin-stretched dimer states by He buffer gas: Quantum calculations for Li₂(a₃ Σ⁺u) at ultralow energies", J.Chem.Phys. 128, 224312 (2008)
- F. Calvo and E. Yurtsever, "Non-monotonic size effects on the structure and thermodynamics of Coulomb clusters in three-dimensional harmonic traps", Eur. Phys.J. D,44,81(2007)
- V. Aquilanti, A. Lombardi, M. B. Sevryuk and E. Yurtsever, "Specific heats of nanoaggregates near a phase transition: How energy partitions among internal modes", Chem. Phys. Lett. 430, 424 (2006)
- E. Yurtsever, D. Yüret and B. Erman, "Quantum Mechanical Calculations of Tryptophan and Comparison with Conformations in Native Proteins", J. Phys. Chem. A. 110, 13933 (2006)

EDITORIAL BOARDS

J. Mathematical Chemistry
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PROFESSIONAL EXPERIENCE

Academic

2009- 2010, Dean of College of Sciences, Koç University
June 2001- 2009, Dean of College of Arts and Sciences, Koç

STATISTICAL THERMODYNAMICS

University
Oct. 1995- present, Professor, Koç University
Jan.1993-Sep 1995, Dean, School of Education, Middle East Technical University
July.1991-Nov.1992, Associate Vice President and Secretary of the Scholarships and Fellowships Program TÜBİTAK
Dec.1988- Sep. 1995, Professor, Middle East Technical University
Jan.1984-Nov.1986, Ass.Chairman., Chemistry Department, Middle East Technical University
Nov.1981-Dec.1988, Assoc.Prof., Middle East Technical University
Oct.1980-Nov.1981, Ass.Prof., Middle East Technical University
Dec.1976-Sep.1980, Researcher, Bielefeld Uni., Germany
June.1973-June.1976, Teaching Assistant, Virginia Commonwealth Uni., USA

Visiting Academic

Mar.1987-Mar.1989, Visiting Prof.,Darmstadt Teknik Uni., Germany
Dec.1981, Visiting Prof., Jagellonian Uni., Poland
June1983-Sep.1983, Visiting Instr., Virginia Commonwealth Uni., USA
June.1981-Sep.1981, Visiting Instr., Virginia Commonwealth Uni., USA
June.1978-Sep.1978, Visiting Instr., Virginia Commonwealth Uni., USA

HONORS and AWARDS

TÜBİTAK Recognition Award 1983
Sedat Simavi Award 1996

MEMBER

Turkish Academy of Sciences 1994

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