

Asst. Prof. EMRE YÜCE

Personal Information

Email: eyuce@metu.edu.tr

Education Information

Doctorate, Universiteit Twente, Netherlands 2009 - 2013

Post Graduate, Koç Üniversitesi, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Turkey 2007 - 2009

Under Graduate, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, Turkey 2002 - 2007

Dissertations

Doctorate, Ultimate-fast all-optical switching of a microcavity, Universiteit Twente, 2013

Post Graduate, Optical modulation and spectroscopy with silicon microspheres, Koç Üniversitesi, Fizik (YI) (Tezli), 2009

Research Areas

Physics, Interdisciplinary Physics and Related Science and Technology Areas, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Optical Properties, Spectroscopy of Matter, Natural Sciences

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2018 - Continues

Assistant Professor, Middle East Technical University, Faculty of Arts and Sciences, Department of Physics, 2016 - 2018

Advising Theses

KOCAMAN S., YÜCE E., Controlling light inside a multi-mode fiber by wavefront shaping, Post Graduate, H.İBRAHİM(Student), 2018

YERCI S., YÜCE E., Broadband spectral splitting of light using wavefront shaping, Post Graduate, Y.BAŞAY(Student), 2018

KOCAMAN S., YÜCE E., Zero-n gap design via modulation of hexagonal photonic crystal lattice, Post Graduate, S.MORADI(Student), 2017

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- **Effective bandwidth approach for the spectral splitting of solar spectrum using diffractive optical elements**
Yolalmaz A., YÜCE E.
OPTICS EXPRESS, vol.28, pp.12911-12921, 2020 (Journal Indexed in SCI)
- **Adaptive Control of Necklace States in a Photonic Crystal Waveguide**

Yuce E., Lian J., Sokolov S., Bertolotti J., Combrie S., Lehoucq G., De Rossi A., Mosk A. P.

ACS PHOTONICS, vol.5, pp.3984-3988, 2018 (Journal Indexed in SCI)

● **Fano lines in the reflection spectrum of directly coupled systems of waveguides and cavities: Measurements, modeling, and manipulation of the Fano asymmetry**

Lian J., Sokolov S., Yuce E., Combrie S., De Rossi A., Mosk A. P.

PHYSICAL REVIEW A, vol.96, 2017 (Journal Indexed in SCI)

● **Tuning out disorder-induced localization in nanophotonic cavity arrays**

Sokolov S., Lian J., YÜCE E., Combrie S., DE ROSSI A., Mosk A. P.

OPTICS EXPRESS, vol.25, pp.4598-4606, 2017 (Journal Indexed in SCI)

● **Measurement of the profiles of disorder-induced localized resonances in photonic crystal waveguides by local tuning**

Lian J., Sokolov S., Yuce E., COMBRIÉ S., De Rossi A., Mosk A. P.

OPTICS EXPRESS, vol.24, pp.21939-21947, 2016 (Journal Indexed in SCI)

● **Optimal all-optical switching of a microcavity resonance in the telecom range using the electronic Kerr effect**

Yuce E., CTÍSTIS G., CLAUDON J., GÉRARD J., Vos W. L.

OPTICS EXPRESS, vol.24, pp.239-253, 2016 (Journal Indexed in SCI)

● **Dispersion of coupled mode-gap cavities**

LIAN J., SOKOLOV S., Yuce E., COMBRIÉ S., De Rossi A., Mosk A. P.

OPTICS LETTERS, vol.40, pp.4488-4491, 2015 (Journal Indexed in SCI)

● **Femtosecond-scale switching based on excited free-carriers**

SIVAN Y., CTÍSTIS G., Yuce E., Mosk A. P.

OPTICS EXPRESS, vol.23, pp.16416-16428, 2015 (Journal Indexed in SCI)

● **Local thermal resonance control of GaInP photonic crystal membrane cavities using ambient gas cooling**

Sokolov S., LIAN J., Yuce E., COMBRIÉ S., LEHOUCQ G., De Rossi A., Mosk A. P.

APPLIED PHYSICS LETTERS, vol.106, 2015 (Journal Indexed in SCI)

● **Dynamical electrical tuning of a silicon microsphere: used for spectral mapping of the optical resonances**

Yuce E., Gürlü O., Thursby G. J. , Serpenguzel A.

APPLIED OPTICS, vol.53, pp.6181-6184, 2014 (Journal Indexed in SCI)

● **Differential ultrafast all-optical switching of the resonances of a micropillar cavity**

THYRRESTRUP H., Yuce E., CTÍSTIS G., CLAUDON J., Vos W. L. , GÉRARD J.

APPLIED PHYSICS LETTERS, vol.105, 2014 (Journal Indexed in SCI)

● **Polarization behavior of elastic scattering from a silicon microsphere coupled to an optical fiber**

Murib M. S. , Yuce E., Gürlü O., Serpenguzel A.

PHOTONICS RESEARCH, vol.2, pp.45-50, 2014 (Journal Indexed in SCI)

● **All-optical switching of a microcavity repeated at terahertz rates**

Yuce E., CTÍSTIS G., CLAUDON J., Dupuy E., Buijs R. D. , de Ronde B., Mosk A. P. , GÉRARD J., Vos W. L.

OPTICS LETTERS, vol.38, pp.374-376, 2013 (Journal Indexed in SCI)

● **Competition between electronic Kerr and free-carrier effects in an ultimate-fast optically switched semiconductor microcavity**

Yuce E., CTÍSTIS G., CLAUDON J., DUPUY E., Boller K. J. , GÉRARD J., Vos W. L.

JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS, vol.29, pp.2630-2642, 2012 (Journal Indexed in SCI)

● **On the pathway of photoexcited electrons: probing photon-to-electron and photon-to-phonon conversions in silicon by ATR-IR**

KARABUDAK E., Yuce E., SCHLAUTMANN S., Hansen O., Mul G., Gardeniers H. (G. E.

PHYSICAL CHEMISTRY CHEMICAL PHYSICS, vol.14, pp.10882-10885, 2012 (Journal Indexed in SCI)

● **Geometrically enhanced morphology-dependent resonances of a dielectric sphere**

Demir A., Yuce E., Serpenguzel A., Lock J. A.

- APPLIED OPTICS, vol.50, pp.6652-6656, 2011 (Journal Indexed in SCI)
Addendum Ultimate fast optical switching of a planar microcavity in the telecom wavelength range
Appl Phys Lett 98 161114 2011
CTİSTİS G., YÜCE E., HARTSUİKER A., CLAUDON J., MAELA B., GÉRARD J., WİLLEM L V.
Applied Physics Letters, vol.99, pp.199901, 2011 (Journal Indexed in SSCI)
- **Ultimate fast optical switching of a planar microcavity in the telecom wavelength range**
Ctistis G., Yuce E., HARTSUİKER A., Claudon J., Bazin M., Gerard J., Vos W. L.
APPLIED PHYSICS LETTERS, vol.98, 2011 (Journal Indexed in SCI)
- **Optical Modulation With Silicon Microspheres**
Yuce E., Gurlu O., Serpenguzel A.
IEEE PHOTONICS TECHNOLOGY LETTERS, vol.21, pp.1481-1483, 2009 (Journal Indexed in SCI)

Articles Published in Other Journals

- **Nonlinear frequency conversion of light inside a microcavity**
YÜCE E.
TURKISH JOURNAL OF PHYSICS, vol.43, pp.221-227, 2019 (Journal Indexed in ESCI)
- **Broadband spectral splitting of white light via 2D diffractive optical elements**
Başay Y., Yüce E.
Turkish Journal of Physics, vol.42, pp.501-508, 2018 (Other Refereed National Journals)

Refereed Congress / Symposium Publications in Proceedings

- **Angle-independent diffractive optical elements for efficient solar energy conversion**
Yolalmaz A., YÜCE E.
Photonics for Solar Energy Systems VIII 2020, None, France, 6 - 10 April 2020, vol.11366
- **Designs of diffractive optical elements for solar energy harvesting**
Yolalmaz A., Yüce E.
5th International Conference on Power Generation Systems and Renewable Energy Technologies, PGSRET 2019, İstanbul, Turkey, 26 - 27 August 2019
- **Deep Learning Algorithm Applied to Daily Solar Irradiation Estimations**
Akbaba E. C. , YÜCE E., AKINOĞLU B. G.
6th International Renewable and Sustainable Energy Conference, Rabat, Malta, 5 - 08 December 2018
- **Deep learning algorithm applied to daily solar irradiation estimations**
Akbaba E. C. , Yüce E., Akinoglu B. G.
6th International Renewable and Sustainable Energy Conference, IRSEC 2018, Rabat, Morocco, 5 - 08 December 2018
- **Investigation of Spectral Splitting and Solar Concentration using Diffractive Optical Elements at Oblique Angles**
Yüce E., Başay Y., Gün B. N.
PVCON 2018, Ankara, Turkey, 4 - 06 June 2018
- **Tailoring Spontaneous Emission**
YÜCE E.
Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, 6 - 10 September 2017
- **Yarı İletken Yapıların ve Işığın Programlanması**
YÜCE E.
YMF22, Ankara, Turkey, 16 December 2016
- **Programmable Photonics**
YÜCE E.

- Fotonik 2016, 18. Ulusal Optik, Elektro-Optik ve Fotonik Çalıştayı, Ankara, Turkey, 23 September 2016
Frequency dependent dynamics of semiconductor microcavities under ultrafast carrier switching
Ctistis G., YÜCE E., Julien C., Allard P M., Gerard J., Vos W. L.
2013 Conference on Lasers Electro-Optics Europe International Quantum Electronics Conference CLEO
EUROPE/IQEC, Munich, Germany, 12 - 16 May 2013
- **Near-Infrared Resonant Cavity Enhanced Silicon Microsphere Photodetector**
Murib M. S. , Yuce E., GÜRLÜ O., SERPENGÜZEL A.
Conference on Photonic Materials, Devices and Applications III, Dresden, Germany, 4 - 06 May 2009, vol.7366
- **Silicon microspheres for optical modulation applications**
Yuce E., Murib M. S. , GÜRLÜ O., SERPENGÜZEL A.
Conference on Photonic Materials, Devices and Applications III, Dresden, Germany, 4 - 06 May 2009, vol.7366

Supported Projects

- Yüce E., TUBITAK Project, Güneş gözeleri için holografik spektral ayrıştırma yöntemi, 2018 - 2021
- Yüce E., TUBITAK Project, Dalga önü şekillendirmesi ile girişim tabanlı fiber spektrometre, 2018 - 2021
- YÜCE E., KÜREKÇİ Ş., Project Supported by Higher Education Institutions, Rastgele Saçılmanın Işığın Frekansına Verdiği Tepkinin Hesaplanması, 2018 - 2019
- Yüce E., TUBITAK Project, Dalga önü şekillendirmesi ile ışığın çok modlu sistem sonrası kontrolü, 2016 - 2018
- YÜCE E., Project Supported by Higher Education Institutions, PROGRAMLANABİLİR GENİŞ BANT IŞIK YOĞUNLAŞTIRMA, 2016 - 2016

Citations

Total Citations (WOS):181
h-index (WOS):9