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Birol Ozturk

Education

Ph.D./Photonics	2004 – 2007	Oklahoma State University	Stillwater, OK
M.Sc./Photonics	2000 – 2003	Oklahoma State University	Stillwater, OK
Teaching Physics Certificate	1998 – 1999	Bogazici University	Istanbul, Turkey
B.Sc./Physics	1994 – 1999	Bogazici University	Istanbul, Turkey

Professional Experience

2020-	Associate Professor	Morgan State University
2014- 2020	Assistant Professor	Morgan State University
2013 – 2014	Adjunct Teaching Faculty	Wentworth Institute of Technology
2010 – 2014	Associate Research Scientist	Northeastern University
2008 – 2010	Postdoctoral Research Associate	Syracuse University
2007 – 2008	Postdoctoral Research Associate	Brookhaven National Lab

Journal Publications

- 1- Zhiyong Tang, Nicholas A. Kotov, Sergei Magonov, and Birol Ozturk, “Nanostructured artificial nacre” *Nature Materials*, 2(6), 413-418, (2003)
- 2- Zhiyong Tang, Birol Ozturk, Ying Wang, and Nicholas A. Kotov, “Simple Preparation Strategy and One-Dimensional Energy Transfer in CdTe Nanoparticle Chains” *Journal of Physical Chemistry B*, 108(22), 6927-6931 (2004)
- 3- Birol Ozturk, Ghazal Behin-Aein, and Bret N. Flanders, “Hard-disk behavior and beyond in Langmuir films of CdSe Nanoparticles” *Langmuir*, 21, 4452-4457 (2005).
- 4- Birol Ozturk, Ishan Talukdar, and Bret N. Flanders, “The Directed-Assembly of CdS Interconnects between Targeted Points in a Circuit.” *Appl. Phys. Lett.*, 86, 183105 (2005).
- 5- Birol Ozturk, Charles Blackledge, Daniel R. Grischkowsky, and Bret N. Flanders, “Reproducible interconnects assembled from gold nanorods”, *Appl. Phys. Lett.*, 88, 040607 (2006).
- 6- Ishan Talukdar, Birol Ozturk; Tetsuya D. Mishima, and Bret N. Flanders, “The Directed Growth of Crystalline Indium Wires”, *Appl. Phys. Lett.*, 88, 221907 (2006).
- 7- Birol Ozturk, Tetsuya D. Mishima, Daniel R. Grischkowsky, and Bret N. Flanders, “Single-Step Growth and Low Resistance Interfacing of Gold Nanowires”, *Nanotechnology*, 18, 175707, (2007)
- 8- Birol Ozturk, Ishan Talukdar, Bret N. Flanders, “Directed Growth of Diameter Tunable Nanowires”, *Nanotechnology*, 18, 365302 (2007)
- 9- Eli Sutter, Birol Ozturk, Peter Sutter, “Selective growth of Ge nanowires by low-temperature thermal evaporation”, *Nanotechnology*, 19, 435607 (2008)
- 10- Sait Eren San, Mustafa Okutan, Tebello Nyokong, Mahmut Durmuş, Birol Ozturk, “Temperature Activated Ionic Conductivity in Gallium and Indium Phthalocyanines”, *Polyhedron*, 30-6, 13, 1023-1026 (2011)
- 11- Ozgur Yavuzcetin, Birol Ozturk, Dong Xiao, and Srinivas Sridhar, “Conicity and depth effects on the optical transmission of lithium niobate photonic crystals patterned by focused ion beam”, *Optical Materials Express*, Vol. 1, Iss. 7, 1262-1271 (2011)

- 12- Ozgur Yavuzcetin, Herman P. Novikov, Rebecca L. Dally, Sean T. Malley, Nicholas R. Perry, [Biol Ozturk](#), and Srinivas Sridhar, “Photonic crystal fabrication in lithium niobate via pattern transfer through wet and dry etched chromium mask”, *J. Appl. Phys.* 112, 074303 (2012)
- 13- Ozgur Yavuzcetin, Nicholas R. Perry, Sean T. Malley, Rebecca L. Dally, Herman P. Novikov, [Biol Ozturk](#), and Srinivas Sridhar, “Fabrication and characterization of single mode annealed proton-exchanged waveguides in x-cut lithium niobate”, *Optical Materials*, 36, 2, 372-375 (2013)
- 14- Hui Zhao, [Biol Ozturk](#), Eric A. Schiff, Laura Sivec, Baojie Yan, Jeffrey Yang, Subhendu Guha, “Backreflector morphology effects and thermodynamic light-trapping in thin-film silicon solar cells”, *Solar Energy Materials and Solar Cells*, 129, 104-114 (2014)
- 15- [Biol Ozturk](#), Andres de-Luna-Bugallo, Eugen Panaitescu, Ann Chiamonti, Fangze Liu, Anthony Vargas, Xueping Jiang, Neerav Kharce, Ozgur Yavuzcetin, Majed Alnaji, Matthew J. Ford, Jay Lok, Yongyi Zhao, Nicholas King, Nibir K. Dhar, Madan Dubey, Saroj K. Nayak, Srinivas Sridhar, and Swastik Kar, “Atomically thin layers of B-N-C-O with tunable composition”, *Science Advances*, Vol. 1, No. 6 (2015)
- 16- Neil Robertson, Mustafa Hizir, Mustafa Balcioglu, Rui Wang, Mustafa Yavuz, Hasan Yumak, [Biol Ozturk](#), Jia Sheng, Mehmet Yigit, "Discriminating a Single Nucleotide Difference for Enhanced miRNA Detection Using Tunable Graphene and Oligonucleotide Nanodevices", *Langmuir*, 31 (36), 9943–9952 (2015).
- 17- [Biol Ozturk](#), Ozgur Yavuzcetin, and Srinivas Sridhar, “A Novel Coupled Resonator Photonic Crystal Design in Lithium Niobate for Electro-optic Applications”, *International Journal of Optics*, Volume 2015, Article ID 426569, 6 pages (2015)
- 18- Salih Toker, Zainab Boone-Kukoyi, Nishone Thompson, Hillary Ajifa, Travis Clement, [Biol Ozturk](#), and Kadir Aslan, "Microwave Heating of Synthetic Skin for Potential Treatment of Gout using the Metal-Assisted and Microwave-Accelerated Decrystallization Technique", *ACS Omega*, 1, 744–754 (2016).
- 19- Nishone Thompson, Zainab Boone-Kukoyi, Raquel Shortt, Carisse Lansiquot, Bridgit Kioko, Enock Bonyi, [Biol Ozturk](#) and Kadir Aslan, “Decrystallization of Crystals using Gold “Nanobullets” and the Metal-Assisted and 3 Microwave-Accelerated Decrystallization Technique”, *Special Issue in Molecules: Molecular Diversity: Gold Nanoparticles for Biomedical Applications*, 21(10), 1388 (2016).
- 20- Carisse Lansiquot, Zainab Boone-Kukoyi, Raquel Shortt, Nishone Thompson, Hillary Ajifa, Bridgit Kioko, Edward Constance, Travis Clement, [Biol Ozturk](#), and Kadir Aslan, “Ultra-Rapid Crystallization of L-alanine using Monomode Microwaves, Indium Tin Oxide and Metal-Assisted and Microwave-Accelerated Evaporative Crystallization”, *Nano Biomed. Eng.*, 9(2): 112-123 (2017).
- 21- Shuaa Alotaibi, Joshua Samba, Sabin Pokharel, Yucheng Lan, Kelechi Uradu, Ayodeji Afolabi, Ilyas Unlu, Gobind Basnet, Kadir Aslan, Bret N. Flanders, Abdellah Lisfi and [Biol Ozturk](#), “Individually Grown Cobalt Nanowires as Magnetic Force Microscopy Probes”, *Applied Physics Letters*, 112 (9), 092401 (2018).
- 22- Nidhi Nandu, Mustafa Salih Hizir, Neil M. Robertson, [Biol Ozturk](#), and Mehmet V. Yigit, “Masking the peroxidase-like activity of MoS2 nanozyme enables label-free lipase detection”, *ChemBioChem*, 19, 17 (2018).
- 23- Jesse Dampare, Mobolaji Zondode, Sz-Chian Liou, [Biol Ozturk](#), Hongtao Yu, and Yucheng Lan. "EELS Investigations of Carbon-rich Boron Carbide Nanomaterials." *Microscopy and Microanalysis* 24, no. S1, 1756-1757 (2018).
- 24- Zainab Boone-Kukoyi, Kaliyah Moody, Chinenye Nwawulu, Rukayat Ariori, Hillary Ajifa, Janelle A. Guy, Carisse Lansiquot, [Biol Ozturk](#), Gabrielle L. McLemore, Enock Bonyi, and Kadir Aslan, “Metal-Assisted and Microwave-Accelerated Decrystallization of Pseudo-Tophus in Synthetic Human Joint Models”, *ACS Omega*, 2019, 4 (2), pp 4417–4428 (2019)

- 25- Alperen Guver, Nafetalai Fifita, Michael Straker, Michael Guy, Kara Green, Taha Yildirim, Ilyas Unlu, Mehmet V. Yigit and Birol Ozturk, “Construction of a Low-Cost and High-Precision Scanning Electrochemical Microscope with Open Source Tools”, *HardwareX*, 6, e00082 (2019)
- 26- Alperen Guver, Peker Milas, Michael Guy, Mustafa T. Sigindere, Veysel Yigit, and Birol Ozturk, “A Novel Nanoscale Electrode for Biosensing.” *2019 IEEE Healthcare Innovations and Point of Care Technologies (HI-POCT)*, 63-66 (2019)
- 27- Monet Stevenson, Janelle Guy, Enock Bonyi, Muzaffer Mohammed, Birol Ozturk, Kyle Drake, Freeman McLean, Ashley Souffrant, Amber Bigio, and Kadir Aslan, “Effects of Gold Nanoparticles and Microwave Heating on the Growth of Basil Plants.” *bioRxiv (2019): 743252*
- 28- Fahim Karim, Ahmed Sikder, William Ghann, Kara Green, Birol Ozturk, Meser M Ali, and Jamal Uddin, “Nanostructured Dye Sensitized Solar Cells with Different Counter Electrodes”, *American Journal of Physical Chemistry*, 9 (1), 1-8 (2020)
- 29- Daniel, I.C., Ghann, W., Ndubuisi, I.N., Okpala, K., Ozturk, B., Rahman, M.M., Chowdhury, F.I., Khan, M.N., Rahman, M.R., Patwary, M.A.M. and Ahmed, N., “Chemical and Mineralogical Composition Analysis of Different Nigerian Metakaolins.”. *Journal of Applied Science & Process Engineering*, 8(2), pp.953-964 (2021)
- 30- Peker Milas, Sheikh Mathab, John Abraham, Jahangir Alam, MVS Chandrashekar, Patrick M. Vora, Birol Ozturk, Michael. G. Spencer, “Electronic and optical characterization of bulk single crystals of Cubic Boron Nitride (cBN),” *AIP Advances*, In Print (2022)
- 31- Oyedoyin Aduroja, Azmath Fathima, Solomon Tadesse, Birol Ozturk, James Wachira, Fasil Abebe, “Microwave-assisted synthesis for a highly selective rhodamine 6G-derived fluorescent sensor and bioimaging”, *Inorganic Chemistry Communications*, Under Review (2022)

Patents

- Bret N. Flanders, Ishan Talukdar, Birol Ozturk, Prem Thapa “Method of making an electrochemical nanowire assembly and attaching cells thereto”, US Patent 8137526 (2012)
- Birol Ozturk, Alperen Guver, Peker Milas, “A Universal Novel Nanoscale Electrode for High Resolution Applications”, US Patent filed, 16/857,821 (2020)
- Birol Ozturk, Peker Milas, “Flexible Piezoelectric Film-Based Power Source”, US Patent filed, 17/216,375 (2021)

Conference Proceedings

- 1- Birol Ozturk, Eric A. Schiff, Hui Zhao, Subhendu Guha, Baojie Yan, Jeffrey Yang, “Nanosphere lithography of nanostructured silver films on thin-film silicon solar cells for light trapping”, *MRS Proceedings*, 1153-A04-17 (2009)
- 2- Hui Zhao, Eric A. Schiff, Birol Ozturk, Subhendu Guha, Baojie Yan, Jeffrey Yang, “Plasmonic Light-trapping and Quantum Efficiency Measurements on Nanocrystalline Silicon Solar Cells and Silicon-On-Insulator Devices”, *MRS Proceedings* 1245-A03-02-07 (2010)
- 3- Birol Ozturk, Eric A. Schiff, Hui Zhao, Fehmi Damkaci, Baojie Yan, Jeff Yang, and Subhendu Guha. "Plasmonic Photocurrent Enhancement in Silicon-on-Insulator Devices Due to Colloidal Silver Nanoparticles." *MRS Online Proceedings Library (OPL)* 1248 (2010).
- 4- Sheikh Mahtab, Peker Milas, Md. Jahangir Alam, MVS Chandrashekar, Michael G. Spencer, Birol Ozturk, “Room Temperature RC Series Zero Phonon Line Emission from Electron Irradiated Cubic Boron Nitride”, *Optica Quantum 2.0 Conference Proceedings*, Boston (2022)

Awards

- Outstanding Research Assistant Award- Department of Physics, Oklahoma State University, 2006
- Excellence in Teaching Award, School of Mathematical, Natural and Computer Sciences, Morgan State University, 2018

- Intellectual Property Innovation of the Year, Morgan State University, 2020

Invited Talks

- “Structural and Charge Transport Properties of Dielectrophoretic Interconnects”, Department of Physics, Oklahoma State University, April 8th, 2005
- “Structural and Charge Transport Properties of Dielectrophoretic Interconnects Composed of Nanoparticulate Building Blocks”, Department of Physics, Fatih University, Istanbul, Turkey, January 5th, 2006

Conference Presentations

- “Anti-stokes photoluminescence of II-VI nanoparticles” (Poster), 2002 ACS National Fall Meeting, Boston, MA
- “Photophysical Processes in the Anti-Stokes luminescence of CdTe Nanoparticles” (Poster), 2003 APS March Meeting, Austin, TX
- “Charge Transport Studies of Dielectrophoretic Interconnects Composed of Gold Nanoparticles”, 2005 APS March Meeting, Los Angeles, CA
- “Structural and Transport Properties of Directly Assembled Interconnects”, 2006 APS March Meeting, Baltimore, MD
- “Low-contact resistance Interfacing of Single-Crystal Gold Nanowires”, 2007 APS March Meeting, Denver, CO
- “Nanosphere lithography of nanostructured silver films on thin-film silicon solar cells for light trapping” (Poster), 2009 MRS Spring Meeting, San Francisco, LA
- “Plasmonic phase shifts and light-trapping in thin film semiconductors and solar cells”, 2010 MRS Spring Meeting, San Francisco, LA
- “Plasmonic Photocurrent Enhancement in Silicon-on-Insulator Devices Due to Colloidal Silver Nanoparticles” (Poster), 2010 MRS Spring Meeting, San Francisco, LA
- “Directed Electrochemical Growth of Individual Crystalline Magnetic Nanowires”, 2016 GRAD-MAP Spring Symposium, College Park, MD
- “Electrochemically Grown Magnetic Nanowires” (Poster), 2016 TechConnect Conference, Washington D.C.
- “Collaborative and Hands-on Approaches to Teaching Programming to STEM Majors”, ASEE Mid-Atlantic Spring 2017 Conference, Morgan State University, Baltimore, MD
- “Collaborative and Hands-on Approaches to Teaching Programming to STEM Majors”, 2017 Capital PKAL Regional Network Conference, Morgan State University, Baltimore, MD
- “Teaching Programming to STEM Majors with Hands-on Projects: A Culturally Responsive Approach”, 2018 Capital PKAL Regional Network Conference, Stevenson University, Owings Mills, MD
- “Directed Electrochemical Nanowire Assembly (DNA): A facile individual nanowire growth method for sensor applications”, 2018 ACS Conference, Boston, MA
- “Magnetic Nanowires Grown with Directed Electrochemical Nanowire Assembly”, (Poster), 2019 Joint MMM-Intermag Conference, Washington D.C.
- “A Novel Nanoscale Electrode for Biosensing”, (Poster), 2019, 6th Annual IEEE EMB Strategic Conference focused on point-of-care technologies (POCT), NIH Gaithersburg campus, MD