

Nikolai A. Kouklin

1. Education.

1998-2001	Ph.D., Engineering (Electrical)	University of Nebraska-Lincoln
1996-1997	M.S., Applied Math and Physics	Moscow Institute of Physics & Technology
1992-1996	B.S., Applied Math and Physics	Moscow Institute of Physics & Technology

2. Academic Experience and Appointments.

2017-now	Professor of MSE+EE+ BME	U. of Wisconsin-Milwaukee
2010-2017	Associate Professor	U. of Wisconsin-Milwaukee
2005-2010	Assistant Professor	U. of Wisconsin-Milwaukee
2002-2005	Postdoctoral Fellow (faculty)	Brown University

3. Honors and Awards.

Distinction Graduation Award, Moscow Institute of Physics and Technology (1997)

4. Key Committee and Professional Services.

APC-MSE representative (2023-2024)

EE-Ph.D. Qualification Exam Coordinator (2021-2022)

CEAS-UWM, faculty screen and search committee for Biomedical Department (2021)

CEAS-UWM, faculty screen and search committee for Biomedical Cluster Hiring (2022)

UWM Committee for Promotion, Division of Natural Sciences (2018-2021)

10 year and HLC graduate review program EE-department coordinator (2012-2014)

CEAS-UWM, faculty screen and search committee for Advanced Manufacturing cluster (2012)

Peer-Reviewing for: Chemical Physics B; Physical Review B; Physical Review Letters; Nature Nanotechnology; Nature Communication ; Applied Physics Letters JACS; Advanced Materials ;Advanced Functional Materials, Scientific Reports, Journal of Applied Physics; Journal of Physics: Condensed Matter Nanotechnology; Solid State Electronics; Journal of Physics D: Appl. Phys. Journal of Electronic Materials; IEEE Journal of Quantum Electronics Journal of Crystal Growth; Journal of Electrochemical Society

Grant Reviewing for: Canada Research Funding Agencies, AFOSR, ARMY, 5x NSF panel reviewer

Editing for: Journal of Advances in Electronics (2014-2016)

5. Publications.

Book chapters.

T.Hosseini, N.Kouklin* (invited) "Carbon Nanotubes Polymer Composites for Photovoltaic and Optoelectronic devices", chapter in "Carbon Nanotubes and Their Polymer Composites", InTech, Austria, ISBN 978-953-51-2469-6 (2016)

N.Kouklin* (invited), M.Omari, A.Gupta, "Transition Metal-Doped ZnO Nanowires: En Route Towards Multi-Color Light Sensing and Emission Applications", chapter in "Nanowires Science and Technology", InTech, Austria, ISBN 978-953-7619-89-3, (2010).

N.Kouklin*(invited), S.Sen, J.Liang "Second-Order Self-Assembled Nano-semiconductors and Oxides by Nanometric Alumina Templates: Device Properties and Applications" , chapter in "Handbook of Nanoceramics and Their Based Nanodevices", *American Scientific Publishers*, ISBN: 978-1588831149 (2009)

S.Sen, N.Kouklin*(invited), "Nanofabrication Based on Self-Assembled Alumina Templates", chapter in "Nanofabrication: Fundamentals and Applications", *World Scientific*, ISBN: 978-981270-076-6 (2008)

S.Bandyopadhyay, N.Kouklin, L.Menon "Device and circuit applications of electrochemically self-assembled quantum dots and wires", chapter in "Quantum Dots and Nanowires", *American Scientific Publishers*, ISBN: 1-58883-013-6 (2003)

Journal Articles, Comments and Proceedings.

E. Kheirandish, Y.Lin, N. Kouklin, K. Sobolev, etc. "Photoluminescence of Crystalline ZnO-P nanofilms grown in liquid phase", submission delayed due to Covid19 research work restrictions (2022-2023)

E. Kheirandish, N. Kouklin, Synthesis and IR-absorption properties of Phosphorous doped Cd_3As_2 polycrystalline film by CVD, in preparation, submission delayed due to Covid19 research work restrictions (2021-2022)

E. Kheirandish, Y.Lin, N. Kouklin, Transport, Photoluminescence and Photoconduction Characteristics of Crystalline Quasi-2D γ -Alumina grown by graphene assisted Atomic Layer Deposition, submission delayed due to Covid19 research work restrictions (2021-2022)

E. Kheirandish, N. Kouklin, Light Emission Study of Free-Standing Quasi-2D- γ -Alumina Grown by Graphene-Assisted Atomic Layer Deposition, *J. of Electronic Materials*, 1 (6) (2021)

E. Kheirandish, M. Schofield, M. Gajdardzisk-Josifovska, N. Kouklin, "Free standing two-dimensional alumina grown by graphene-assisted Atomic Layer Deposition", *Advanced Materials Interfaces*, *Advanced Materials Interfaces*, 7(15), 2000561 (2020)

J.C. Marnocha, E. Kheirandish, N. A. Kouklin, "Controlled Color Tuning of Ternary II-VI Alloyed Quantum Dots by Alcohol", *Materials Research Express*, 7(7) (2020)

E. Kheirandish, J.Liang ,N. A. Kouklin, Light emission of nanoporous GaN produced by a top-down, non-lithographical nanopatterning, *Journal of Nanomaterials*, v. 2018, 5684150 (2018)

E.Kheirandish,T.Hosseini,N.Yavarishad,N.Kouklin,"Synthesis, Photoluminescence and Charge-Transport Properties of Nano-columnar Titanium Dioxide Films Produced by Sputtering on Au-coated Nanoporous Templates" *Materials Research Express*, 2 (5), 026413 (2018)

N.Yavarishad, T.Hosseini, E.Kheirandish, C.P.Weber, N.Kouklin*,"Room-temperature self-powered photo-detector based on the optically-induced Seebeck effect in Cd_3As_2 crystals", *Applied Physics Express* (2017)

T.Hosseini, N.Yavarishad, J.Alward, M.Gajdardziska-Josifovska, N.Kouklin* "Large thermopower Cd_3As_2 by vapor deposition for room-temperature heat waste recovery", *Adv. Electronic Materials*, v. 2 (1) (2016)

C. Weber*, E.Arushanov, B. Berggren, T.Hosseini, N.Kouklin, A.Nateprov "Transient reflectance of photoexcited Cd_3As_2 ", *Applied Physics Letters* 106, 231904 (2015)

T.Hosseini, D.Tomer, S.Rajput, L.Li, N.Kouklin* "Transport and photoconduction characteristics of metal-graphene-4H-SiC (0001) heterojunction devices", *Applied Physics Letters* 105 (22), 223107 (2014)

T.Hosseini, N.Kouklin* “On plasmon-induced photocurrent and doping of metal-patterned graphene”, Applied Physics Letters 105 (4), 043104 (2014)

T.Hosseini, N.Kouklin*, “Synthesis, spectroscopic and photoconduction characteristics of coaxial poly(2-methoxy-5-(2'-ethyl-hexyloxy)-1,4-phenylene-vinylene single-walled carbon nanotube films with Ohmic-like transport attributes”, J. Appl. Polym. Science, (2013)

T.Hosseini, I.Flores-Vivian, K.Sobolev, N.Kouklin*, “Concrete Embedded Dye-Synthesized Photovoltaic Solar Cell”, Scientific Reports, 3, 2727 (2013)

T. Hosseini, M.Omari, N.Kouklin* “Carbon Nanotube IR-Photothermovoltaic Devices: Power, Fill Factor, and Transient Response”, Electron Device Lett., 34, 7, 924-926 (2013)

M.Omari, T. Hosseini, N.Kouklin* “Investigation of Time-Rated Defect Formation, Infrared Absorption and Transport Characteristics of Single-Walled Carbon Nanotubes Wet-Processed in Phosphoric Acid”, Nano, 7, 1250026 (2012)

M.Omari and N.Kouklin* "Comment on: Photocurrent Amplification at Carbon Nanotube-Metal Contacts", Advanced Materials, 23, 3747 (2011)

M. Omari, N. Kouklin* “Photothermovoltaic effect in carbon nanotubes: En route toward junctionless infrared photocells and light sensors”, Applied Physics Letters, 98, 243113 (2011)

M.Omari, A.Gupta, N.Kouklin* “Temperature-dependent studies of defect-assisted light emission and excitation processes in crystalline ZnO nanowire phosphors”, Journal of Applied Physics, 108, 024315 (2010)

B. Hansen, N. Kouklin, G. Lu, I-Kuan Lin, J. Chen, and X. Zhang “Transport, Analyte Detection and Opto-Electronic Response of p-type CuO nanowires”, J. of Chem. Phys. C, 114, 2440 (2010).

A.Gupta, M.Omari, N.Kouklin* “Investigation of high-T luminescence processes in ZnO nanorods grown catalytically by vapor-transport method”, Phys. Status Solidi C, 6, 607 (2009)

M.Omari,D.Brocker,N.Kouklin* “Assembly and photo-electric properties of interconnected bundle networks of multi-walled carbon nanotubes”, Adv. Scien. Lett., 2, 398 (2009)

A.Gupta,M.Omari,N.Kouklin* “Ultraviolet pre-avalanche photoconduction properties of transitional metal-doped ZnO nanowires”, Journal of Elect. Materials, 38, 596 (2009)

N.Kouklin* “Cu-doped ZnO nanowires for efficient multispectral photodetection applications”, Advanced Materials, 20, 2190 (2008)

A.Gupta, M.Omari, N.Kouklin* “Spectral investigation of carrier recombination processes in ZnO nanorods at high temperatures”, J. Appl. Physics, 103,124312 (2008)

M.Omari, N.Kouklin*, G.Lu, J.Chen, M.Gajdardziska-Josifovska “Fabrication of Cd₃As₂ nanowires by direct vapor-solid growth and their infrared absorption properties”, Nanotechnology, 19, 105301 (2008)

D.Chowdhary, N.Kouklin* “ dc-Photoconduction studies of single walled carbon nanotube bundles”, Physical Review B, 76, 1 (2007), also selected for insertion in the Virtual Journal of Nanoscale Science & Technology (July 30, 2007)

S.Sen, D.Chowdhary, N.Kouklin* “Negative photoconduction of planar heterogeneous random network of ZnO-carbon nanotubes” Applied Physics Letters, 91, 093125 (2007)

D.Chowdhary, W.Kim and N.Kouklin* "Unstable micellarization of carbon nanotube solutions for low loss reactivity and cross-linking", *Small*, 3, 226 (2007)

N.Kouklin*, S.Sen "Towards Controlled Assembly and Manipulation of ZnO nanowires for nanoscale imaging applications", *Applied Physics Letters*, 89, 123114 (2006)

N.Kouklin*, S.Sen and M.Gajdardziska-Josifovska, "Self-driven formation of Zn₃As₂ Single Crystal Platelets by CVD", *Applied Physics Letters*, 89, 071901 (2006), also selected for insertion in *Virtual Journal of Nanoscale Science & Technology* (August, 2006)

N.Kouklin* and J.Liang "Ultra-dense GaN nanopillar and nanopore arrays by self-assembly nanopatterning", *Journal of Electronic Materials*, 35, 1133 (2006)

N.Kouklin* "Self-Assembled Network of Carbon Nanotubes Synthesized by CVD in Alumina Porous Template", *Applied Physics Letters*, 87, 203105 (2005)

N.Kouklin*, W.Kim, A.Lazareck and J.Xu "Carbon Nanotube Probes for Single Cell Experimentation and Assays", *Applied Physics Letters*, 87, 173901 (2005); selected for insertion in *Virtual Journal of Nanoscale Science & Technology* (issue October 31, 2005) and *Virtual Journal for Biological Physics Research* (issue November 1, 2005)

N. Kouklin*, M.Tzolov, D.Straus and J.Xu "Infrared absorption properties of carbon nanotubes synthesized by chemical vapor deposition", *Applied Physics Letters*, 85, 4463 (2004); selected for insertion in *Virtual Journal of Nanoscale Science & Technology* (2004)

H.Chik, J.Liang, S.Cloutier, N.Kouklin, J.Xu "Periodic Array of uniform ZnO nanorods by Second Order Self-Assembly", *Applied Physics Letters*, 84, 3376 (2004)

N.Kouklin*, H.Chik, J.Liang, M.Tzolov and J.Xu "Highly periodic, 3D arranged InGaAsN:Sb quantum dot arrays fabricated nonlithographically for optical devices", *Journal of Physics D: Applied Physics*, 36, 2634 (2003)

J. Liang, S.-K. Hong, N. Kouklin, R.Beresford, J.Xu "Nanoheteroepitaxy of GaN on a Nanopore Array Si Surface", *Applied Physics Letters*, 83, 1752 (2003), also in *Virtual Journal of Nanoscale Science & Technology*

N.Kouklin, L.Menon, S.Bandyopadhyay "Room Temperature Single Electron Charging in Self-Assembled Quantum Dots and Wires", *Applied Physics Letters*, 80, 1649 (2002)

S.Bandyopadhyay, L.Menon, N.Kouklin, N.Ianno, F.Williams "Self-assembled networks with neural computing attributes", *Smart Materials and Structures*, 11 (5), 761 (2002)

N.Kouklin, L. Menon, A. Z. Wong, D. W. Thompson, J. A. Woollam, P. F. Williams, and S. Bandyopadhyay "Giant Photoresistivity and Optically controlled switching in self-assembled nanowires", *Applied Physics Letters*, 79, 4423 (2001); selected for publ. in *Virtual Journal of Nanoscale Science & Technology*, (March'02)

A.Balandin, K.Wang, N.Kouklin, S.Bandyopadhyay "Raman spectroscopy of electrochemically self-assembled CdS quantum dots", *Applied Physics Letter*, 76, 137 (2000)

N.Kouklin, S.Bandyopadhyay, S.Tereshin, A. Varfolomeev and D. Zaretsky, "Electronic bistability in electrochemically self-assembled quantum dots: A potential nonvolatile random access memory", *Applied Physics Letters*, 76, 460 (2000)

S.Bandyopadhyay, L.Menon, N.Kouklin, H.Zeng, D.Sellmyer "Electrochemically Self-Assembled Quantum Dot Arrays", *Journal of Electronic Materials*, 28, 515 (1999)

N.Kouklin*, N.Yavarishad, T.Hosseini "Investigation of Temperature Dependent Transport and Thermo-Electric Characteristics of Cd₃As₂ by Chemical Vapor Deposition", *ECS Transactions*, to appear in v.76 (2016)

N.Kouklin*, M.Omari "Optical-gating and Carrier Modulation Effects in Single-walled Carbon Nanotube-Metal Oxide Interfaces for Opto-electronic Device Applications", *ECS Transactions* 25 (21), 27-31 (2010)

M.Mukhin, S.Sen, N.Kouklin*, A.Skliarov, D. Dhuru, A.Iacopino, V.Yakovlev "Excitation-emission fluorescence spectroscopy and time-gated Raman microscopy analysis of dental tissues" *Proceedings of SPIE:Lasers in Dentistry XIII*, Editor(s): P. Rechmann and D.Fried v.6425:642507, ISBN: 9780819465382 (2007)

S.Bandyopadhyay, L.Menon, N. Kouklin, P. Williams, N.Ianno "Self-Assembled Neuromorphic Networks", *Proc. SPIE Int. Soc. Opt. Eng.* 4590, 286 (2001)

N.Kouklin, S. Bandyopadhyay "Capacitance-voltage spectroscopy of self-assembled ordered arrays of quantum dots", *Compound Semiconductors*, 2000 IEEE International Symposium on Comp. Semicond. , pp.303-307, (2000)

S. Bandyopadhyay, L.Menon, N. Kouklin, D.Yue, A.Varfolomeev and D.Zaretsky, "Electronic Bistability and Memory Effect in Self Assembled Quantum Dots", in *Proceedings of Quantum Confinement: Nanostructures*, 5-th international symposium; editors M.Cahay, D.Lockwood, J. Leburton and S. Bandyopadhyay, The Electrochemical Society, Inc., Pennington, NJ, ISBN 1-56677-213-3 (2000)

Conference Abstracts.

E. Kheirandish, Y.Lin, N.Kouklin " Charge Transport and Photoconduction Effects in Quasi Two-Dimensional γ -Al₂O₃ Grown by Graphene Assisted Atomic Layer Deposition", 63-EMC virtual conference (2021)

E. Kheirandish, M. Schofield, M. Gajdardziska-Josifovska, N. Kouklin "Free Standing Quasi two dimensional γ -Al₂O₃ grown by Atomic Layer Deposition", 62 EMC (2021)

E. Kheirandish*, S.King, N.Kouklin (invited) " Photoluminescence and charge transport characteristics of nano-columnar TiO₂ films prepared by RF sputtering on nanoporous Al₂O₃", 2nd International Conference on Materials Science & Engineering (Mat Science -2020) in San Francisco, USA , April 27-29 (2020)

E. Kheirandish*, N.Kouklin, et. al. " Free Standing Quasi two dimensional γ -Al₂O₃ grown by Atomic Layer Deposition", *Electronic Materials Conference* (2020)

N.Yavarishad, T.Hosseini, N.Kouklin "Investigation of Temperature Dependent Transport and Thermo-Electric Characteristics of Cd₃As₂ by Chemical Vapor Deposition", *ECS-Prime Conference*, Honolulu, HI, USA (2016)

T. Hosseini, N.Yavarishad, N.Kouklin* (invited) "C-nanotube based infrared thermo-voltaic cells and detectors", *International Nanotech Conference*, Paris, France (2015)

T.Hosseini, I.Flores-Vivian, K.Sobolev, N.Kouklin, Concrete-embedded solar cell for on-site power generation, 5th International Symposium on Nanotechnology in Construction, Chicago, USA (2015)

C.Weber, B.Berggren, E.Arushanov, T.Hosseini, N.Kouklin, "Transient reflectance of photoexcited electrons and holes in cadmium arsenide", *American Physical Society Meeting*, TX, USA (2015)

T.Hosseini and N.Kouklin (invited) "Graphene-Zn₃As₂ based IR-photo-thermo-voltaic cells, *Energy Materials Nanotechnology Conference*", Las-Vegas, NV, USA (2013)

N.Kouklin*, M.Omari T.Hosseini "Photothermoelectric effects in carbon nanotubes", *Prime 2012-Electrochemical Society Meeting* , Honolulu, USA (2012)

N.Kouklin*, M.Omari "Optical-gating and Carrier Modulation Effects in Single-walled Carbon Nanotube-Metal Oxide Interfaces for Opto-electronic Device Applications" *216-Electrochemical Society Meeting*, Vienna, Austria (October, 2009)

N.Kouklin*, (invited) D.Chowdhary "dc-photoconduction studies of single-walled carbon nanotube bundles", International Diamond Conference, Sitges, Spain (Sept. 2008)

N.Kouklin*, A.Gupta, M.Omari, S. Sen "In-Situ Cu-Doped ZnO Nanowires for Efficient Multi-Color Photodetection Applications", *2008-TMS EMC Conference*, CA, Santa-Barbara (June 2008)

A.Gupta, M.Omari and N.Kouklin* (invited) "High-T PL and PLE characteristics of ZnO nanowire arrays grown on c-Si for opto- electronic device applications", *TMS-ISSLED*, AZ Phoenix (April 2008)

S.Sen, M.Gajdardziska-Josifovska, N.Kouklin* "Properties and Applications of Zn₃As₂ Single Crystal Platelets by CVD", University of Wisconsin-Milwaukee, *LSS Symposium* (August 2006)

N.Kouklin*, W.Kim, A.Lazareck, J.Xu "Controlled Assembly of Carbon Nanotube Electrodes", *2005-TMS EMC Conference*, CA, Santa-Barbara (June 2005)

W.Kim, N.Kouklin, J.Xu "Functionalization Enhancement of Carbon Nanotubes for Bio-Assays", 206 ECS Meeting, Honolulu, Hawaii (October 2004)

J. Liang, S.-K. Hong, N. Kouklin, R.Beresford, J.Xu. "Nanoheteroepitaxy of GaN on a Nanopore Array Surface", *IEEE-NANO-2003*, CA, San-Francisco (August 2003)

N.Kouklin, H.Chik, J.Liang, M.Tzolov, J.Xu "Ultra-high dense InGaAsN:Sb/GaAs quantum dot arrays fabricated nonlithographically for long wavelength optical devices", *2003-TMS EMC conference*, UT, Salt-Lake City (June 2003)

L.Menon, N.Kouklin, S. Bandyopadhyay, "Electrochemical self-assembly of structures for single electronics", presented on the *Electrochemical Society Meeting* (2002)

S.Bandyopadhyay, L.Menon, N.Kouklin, P. Williams, N.Ianno "Self-Organized nanoscale networks with neural and quantum computing attributes", *SPIE's International Simposium on MICRO/MEMS*, Australia (December 2001)

S.Bandyopadhyay, N.Kouklin, A.Balandin,"Room Temperature IR-Absorption in Electrochemically Self-Assembled 3.5 nm CdS Quantum Dots", *2001 Electronic Materials Conference*, IN, Notre-Dame (June 2001)

M.Chipara, R. Kirby, A. Bender, R.Scovsky, S. Bandyopadhyay, L.Menon, N.Kouklin, J.D. Selmyer "Electrodeposition and Magnetic Properties of Fe-polyppyrrrole Composites", *46th Annual Conference on Magnetism and Magnetic Materials* (November 2001)

N.Kouklin, S.Bandyopadhyay, in Technical Digest of the 27th International Symposium on Compound Semiconductors, *IEEE Press*, Piscataway, NJ, pp. 303-308 (2000)

S. Bandyopadhyay, L. Menon, N. Kouklin, A. Varfolomeev and S. Stefanovich, "Bistable Current Response of Self Assembled CdS Quantum Dots and their Applications to High Density Memory", *the Fifth International Conference on Quantum Confinement: Nanostructure Materials*, Boston (November 1998)

N.Kouklin "Propagation of Temperature Shock Waves in Media", *Moscow Institute of Physics and Technology Anniversary Conference*, Moscow, Russia (November 1997)

Papers presented at professional meetings, conference abstracts.

N.Kouklin (invited) "Nano-metric materials and structures by Self-Assembly Techniques: Another Fad or Viable Pathway to Nanoscale Applications ?" University of Wisconsin-Milwaukee, LSS seminar series (April, 2005)

N.Kouklin, A.Hartman J.Xu “Carbon Nanotubes for Biological Applications”, poster on *DARPA Bio:Info:Micro Program PI Meeting* San-Francisco, CA (November 2003)

N.Kouklin “Carbon Nanotubes as Next-Generation Cellular and Sub-Cellular Probes”, *DARPA Bio:Info:Micro Program Meeting*, Brown University (September 2003)

J.Xu, N. Kouklin “Highly Ordered Carbon Nanotube Array for far-IR to near IR detection and extending to visible-UV”, the Air Force Office of Scientific Research (AFOSR), annual review (January 2003)

J.Xu, C.Papadopoulos, N. Kouklin, A.Yin “Y-CNTs: Controlled Growth and Device Explorations”, Office of Naval Research Annual Meeting, Brown University, (December 2002)

N.Kouklin, J.Xu, “Carbon Nanotubes for IR-Photodetectors”, *AFOSR* semi-annual meeting, Brown University (November 2002)

N.Kouklin, D.Vilchez, J.Xu “Carbon Nanotube Recording from Living Cells”, poster presented on *DARPA Bio:Info:Micro Program PI Meeting*, Boston (October 2002)

K.Chandran, M.Jouzy, N.Kouklin, A.Yin, J.Xu “Interfacing Proteins with Molecular Links and Nanocircuitry”, poster presented on *DARPA PI Meeting*, San-Francisco (August 2002)

J.Xu, N.Kouklin, “Emulation of Cortical Circuits by Networks of Carbon Nanotube and other Nanoscale Assemblies”, talk on *DARPA PI Meeting*, Boston (June 2002)

6. Research grants/awards.

Funded:

Description	Source	PI / co-PI	Start Date	End Date	Total Award
RAFT UWM	UWM	PI	1/2022	6/2022	5,000
RGI UWM	UWM	PI	1/2019	12/2021	53,300
CEAS Research St.	UWM	PI	1/2019	12/2021	39,000
NSF Rapid: Superhydrophobic and Photocatalytic Antimicrobial Coatings	NSF: CBET	Co-PI	5/2020	4/2021	198,000
RUI: Conductiv., diffusion, and dispersion of photo-excited Dirac fermions in cadmium arsenide	NSF-DMR UWM subaward	Co-PI	9/2015	9/2018	320,000
SURF for J. Alward	UWM	Kouklin, Nikolai	2017	2017	\$3.6K
SURF for R.Puffer	UWM	Kouklin, Nikolai	2017	2017	\$3.6K
SURF for Y.Lin	UWM	Kouklin, Nikolai	2018	2019	\$3.6K
JCI Research Assistantship	Industry	PI	1/2015	1/2018	127,600
IR-photovoltaics based on CNTs	NSF-ECCS	PI	9/2012	9/2016	167,512
REU NSF supplement	NSF-ECCS	PI	9/2012	9/2015	7,495

SURF, UWM-UG-Support	UWM	PI	9/2016	06/2017	5,400
SURF, UWM-UG-Support	UWM	PI	6/2013	06/2014	4,000
SERS-based optical sensors	WI-SYSTEM	PI	8/2010	08/2011	50,000
Enhancing UG-Student Learn. & Res.Experience on Nano-Devices	NSF-NUE	Co-PI	1/2010	12/2012	199,918
Rockwell: Nanoarray-based optical sensor	Industry	PI	1/2010	7/2011	58,173
RGI 5	UWM	PI	1/2010	12/2012	117,000
REU-NSF supplement	NSF- ECCS	PI	9/2008	3/2012	4,367
SURF, UWM-UG-Support	UWM, internal acc.	PI	6/2008	6/2009	6,000
MRI: Acquisition of a High-Resolution SEM for Dept. of Biology	NSF MRI-CHEM	Co-PI	9/2007	8/2010	603,617
CNTs for wavelength tunable IR optical detectors and sensors	NSF- ECCS	PI	9/2006	3/2012	239,279

7. Undergraduate and graduate research projects, theses and dissertations directed.

Supervisor/ Co-advisor	Name	Years	Last Known Position/Status
Postdoc. Researchers	Somaditya Sen	2007-2008	Assoc. Prof., Indian Inst. of Tech.
Ph.D. Students	Yuting Lin Elaheh Kheirandish Tahereh Hosseini Mones Omari	2019- 2015-2021 2012-2017 2007-2012	Passed QE, current Postdoctoral Research., SUNY Tesla Ass. Prof.,Philadelph. Univ., J.
Ph.D. Committee/ Co-Advisor	Filip Zemajtis David Frailey Aparna Deshmukh Dushnyat Tomer Rajan Arora Mike Danilyuk	2018-2023 2019-2023 2017-2021 2014-2017 2006-2011 2006-2012	CE/UWM, graduated EE/UWM, current CE/UWM, graduated Physics/UWM, graduated Physics/UWM, graduated ME/UWM, GE-healthcare
M.S.-thesis Students	Casey Marnocha Tahereh Hosseini Arti Gupta Devansh Chowdhary Mones Omari Bashar Pandey	2017-2018 2011-2012 2008-2009 2006-2007 2006-2007 2005-2006	unknown Cont. in EE-Ph.D., UWM Engineer, Intel Manager, Virtual Tech. Cont. in EE-Ph.D., UWM Software Developer TX, USA
B.S.-UG Research Students	Ryne Puffer Jacob Alward Alex Torres Donovan Brocker Peter Sieber	2016-2017 2014-2017 2012-2012 2009-2012 2009-2009	Rockwell Ph.D., North Carolina Univ. Engineer, ABB Assistant Prof. , MSOE Finished Ph.D., Penn State Univ.

G Student UWM (Internal) Research Poster Presentations:

E. Kheirandish, et. al, “Free-standing two-dimensional alumina grown by graphene-assisted Atomic Layer Deposition”, Student Research Poster Competition, UW-Milwaukee (2018)

E. Kheirandish, et. al. “Synthesis, Photoluminescence and Charge transport properties of Nano-columnar Titanium Dioxide films produced by sputtering on Au/Alumina Nano- templates”, Advanced Analysis Facility, UW-Milwaukee (2017)

E. Kheirandish, et. al, “TiO₂ thin-film on nanoporous Alumina; fabrication and characterization” Poster, Student Research Poster Competition, UW-Milwaukee (2017)

N.Navarishad, et. al, “Cd₃As₂ Based Photodetector”, Student Research Poster Competition, UW-Milwaukee (2018)

+ 4 UG CEAS& UWM Student Poster Competitions (2017)

8. UG and G Course Teaching (2017-2022)

EE 361, Spring 2022, ~ 25 students

EE/MAT 481, Spring 2022, ~ 5 students

EE361, Fall 2021, ~ 20 students

EE361, Spring 2021, ~25 students

EE361, Fall, 2020, ~ 30 students

EE361, Spring 2020, ~ 30 students

EE/MAT 481, Spring 2020, ~ 10 students

MAT 481, Spring 2019, ~ 15 students

EE 361, Spring 2019, ~ 30 students

EE699, Spring 2019, independent study, 1 student

MAT 481, Spring 2018, ~ 10 students

EE 361, Spring 2018, ~ 35 students

EE 361, Fall 2018, ~ 35 students

BME 690, EE4-890, Fall 2017 ~ 10 students

BME 690/EE4-890, Fall 2017 ~ 10 students

EE361, Fall, 2017, ~ 30 students

EE699, Fall 2017, independent study, 1 student

EE999, Fall 2017, independent study, 1 student