







Faculty Listing

MATERIALS SCIENCE AND ENGINEERING | WELDING ENGINEERING

Department of Materials Science and Engineering at THE OHIO STATE UNIVERSITY

	Kaveh Ahadi, Assistant Professor Materials Science and Engineering Fontana Laboratories 4017 ahadi.4@osu.edu Ph.D., University of California Santa Barbara Molecular beam epitaxy (MBE) to grow, explore, and manipulate thin films and heterostructures of quantum materials	Electronic, photonic, magnetic materials
	Sheikh Akbar, Professor Materials Science and Engineering Fontana Laboratories 4010 614-292-6725 akbar.1@osu.edu Ph.D., Purdue University 1985 Synthesis-microstructure-property relations of ceramic bulk, thin-film and nano-structures for electrochemical devices such as sensors and biomedical applications	Ceramic science and engineering Energy materials Sensor materials and tech
	Boian Alexandrov, Research Professor Welding Engineering 128 EJTC 614-292-735 alexandrov.1@osu.edu Ph.D., Technical Un of Sofia, Bulgaria Physical/welding metallurgy of structural alloys; Weldability testing; Weld failure analysis; Weld phenomena modeling; Welding processes	Characterization and microscopy Computational MSE Metallic materials Processing & manufacturing Welding engineering
	Peter Anderson, Professor Materials Science and Engineering Fontana Laboratories 4018 614-292-0176 anderson.1@osu.edu Ph.D., Harvard University 1986 Mechanical properties and underlying physics of deformation, with applications to metals, shape memory alloys, nanostructured materials, and tissue scaffolds; Computational methods for mechanical behavior	Computational MSE Mechanical properties Metallic materials
	Avi Benatar, Associate Professor Welding Engineering 124 EJTC 614-292-1390 benatar.1@osu.edu Ph.D., MIT 1987 Engineering analysis; Joining plastics and composites; Simulation of welding processes; Welding design	Polymers Welding engineering
	Desmond Bourgeois, Assistant Professor Welding Engineering EJTC bourgeois.16@osu.edu Ph.D., Ohio State 2015 Nondestructive evaluation of welded materials; in-process monitoring of additive manufacturing and welding processes; development of advanced nondestructive techniques; ultrasonic microstructural characterization	Characterization and microscopy Welding engineering
	Enam Chowdhury, Assistant Professor Materials Science and Engineering Fontana Laboratories 4015 614-292-4286 chowdhury.24@osu.edu Ph.D., University of Delaware 2004 Laser materials processing; Ultrafast laser; Laser damage and ablation; Laser plasma particle acceleration; High and ultra-high intensity laser technology; Warm dense matter; Laser surface engineering	Ceramic science and engineering Electronic, photonic, magnetic materials Processing & manufacturing

97 MSE 78 WE






Graduate students enrollment
Autumn 2022

12 MSE 29 WE

Master of Science Degrees Conferred
2022

24 MSE 6 WE

Doctor of Philosophy Degrees Conferred
2022

	Glenn Daehn, Fontana Chair of Metallurgical Engineering, Professor Materials Science and Engineering Fontana Laboratories 4022 614-292-6779 daehn.1@osu.edu Ph.D., Stanford University 1988 Manufacturing and processing, focused on impulse (high speed and pressure) methods	Metallic materials Processing & manufacturing Welding engineering
	David Dean, Associate Professor Materials Science and Engineering 388 Biomedical Research Tower dean.1016@osu.edu Ph.D., City University of New York - Graduate School 1993 Musculoskeletal reconstructive surgery; Biofabrication; Stiffness-matching; Resorbable metals; 3D printing	Biomaterials Polymers
	Dave Farson, Associate Professor Welding Engineering 116 EJTC 614-688-4046 farson.4@osu.edu Ph.D., The Ohio State University 1997 Laser welding and materials processes; Nanoscale materials processes; Modeling and simulation of welding and materials processing	Welding engineering
	Carolyn Fink, Assistant Professor Welding Engineering 132 EJTC 614-292-7823 fink.242@osu.edu Ph.D., Otto-v-Guericke Un Magdeburg, Germany 2016 Welding metallurgy; Welding testing; Weld degradation phenomena; Defect formation; Materials modeling	Characterization and microscopy Computational MSE Metallic materials Processing & manufacturing Welding engineering
	Gerald Frankel, Professor Director Fontana Corrosion Center (FCC) Materials Science and Engineering Fontana Laboratories 4024 614-688-4128 frankel.10@osu.edu Sc.D., MIT 1985 Corrosion; Electrochemistry; Embrittlement	Corrosion Metallic materials

Research

FOCUS AREAS WITH DEDICATED FACULTY

Biomaterials (4 faculty members)
Ceramic science and engineering (4)
Characterization and microscopy (10)
Computational materials science and engineering (10)
Corrosion (6)
Electronic, photonic, magnetic materials (14)
Energy materials (7)
Mechanical properties of materials (13)
Metallic materials (12)
Polymers (4)
Processing and manufacturing (12)
Sensor materials and technologies (4)
Welding engineering (15)

go.osu.edu/multidiscipline

Department research facilities

Advanced Casting Research Center
Advanced Ceramics Research Lab
Center for Accelerated Maturation of Materials (CAMM)
Center for Electron Microscopy and Analysis (CEMAS)
Center for Performance and Design of Nuclear Waste forms and Containers (WastePD)
Center for Superconducting and Magnetic Materials (CSMM)
Center for Weldability Evaluation
Fontana Corrosion Center (FCC)
Impulse Manufacturing Lab (IML)
Integrated Computational Materials Engineering for Welding
Lightweight Materials and Manufacturing Research Laboratory
Manufacturing X Lab

Multidisciplinary centers

Center for Automotive Research
Center for Design and Manufacturing Excellence
Center for Emergent Materials
Center for Regenerative Medicine and Cell-Based Therapies
Institute for Materials Research
Simulation Innovation and Modeling Center

Multi-institutional centers

Advanced Casting Research Center (ACRC)
Center for Advanced Semiconductor Fabrication Research and Educations (CAFE)
Hybrid Autonomous Manufacturing, Moving from Evolution to Revolution (HAMMER)
Manufacturing and Materials Joining Innovation Center (Ma2JIC)

	Hamish Fraser, Ohio Regents Eminent Scholar, Professor, Director of CMM Materials Science and Engineering 107 CEMAS 614-643-3110 fraser.3@osu.edu Ph.D., University of Birmingham, U.K. 1972 Analytical electron microscopy; Material processing; High-temperature materials; Interfaces; Advanced materials	Characterization and microscopy Mechanical properties Metallic materials
	Maryam Ghazisaeidi, Associate Professor Materials Science and Engineering Smith Laboratory 5062 614-292-8474 ghazisaeidi.1@osu.edu Ph.D., University of Illinois Urbana-Champaign 2011 Computational materials science; Materials structure; First-principles calculations; Atomic-scale investigation of deformation mechanisms	Computational MSE Mechanical properties
	Perena Gouma, Professor, Edward Orton, Jr., Chair of Ceramic Engineering Materials Science and Engineering Fontana Laboratories 4014 614-292-4931 gouma.2@osu.edu Ph.D., University of Birmingham, U.K. 1972 Nanomaterials; Polymorphic metal oxides; Biochemical sensors; Photochemical reaction catalysts; Scalable nanomanufacturing; Smart health	Ceramic science and engineering Sensor materials and tech
	Tyler Grassman, Assistant Professor Materials Science and Engineering - Electrical and Computer Engineering Fontana Laboratories 4012 614-688-1704 grassman.5@osu.edu Ph.D., University of California, San Diego 2007 Electronic and photonic materials; Nanostructured materials; Surface and interface science; Photovoltaics; Optoelectronics	Electronic, photonic, magnetic materials Energy materials
	Dennis Harwig, Research Associate Professor Welding Engineering 110 EJTC 614-440-5124 harwig.4@osu.edu Ph.D., Cranfield University 2003 Metal additive manufacturing; Directed energy deposition; Computer aided robotics; Arc welding processes & controls; Metal transfer waveform design; Shipbuilding; Standards; Die casting; Die materials	Processing & manufacturing Welding engineering
	Jinwoo Hwang, Assistant Professor Materials Science and Engineering 111 CEMAS 614-643-3459 hwang.458@osu.edu Ph.D., University of Wisconsin 2011 Electron microscopy; Structure-property relationship in complex oxides interfaces; III-V semiconductors; Organic solar cells; Structure and deformation of disordered materials; STEM technique development; Materials modeling	Characterization and microscopy Electronic, photonic, magnetic materials Energy materials
	Yanzhou Ji, Assistant Professor Materials Science and Engineering Fontana Laboratories 4023 ji.730@osu.edu Ph.D., Pennsylvania State University 2018 Materials microstructure modeling using phase-field and multi-scale approaches	Computational modeling
	Menachem Kimchi, Associate Professor-Clinical Welding Engineering 130 EJTC 614-247-0001 kimchi.4@osu.edu kimchi.4@osu.edu M.S. The Ohio State University, 1981 Resistance welding; Solid-state welding processes; Weldability of steels with metallic and non-metallic coatings and electrode materials for resistance welding	Welding engineering

\$19 million

Research expenditures in the Department of Materials Science and Engineering

2022 Annual Statistical Report | College of Engineering Research Expenditures by Department

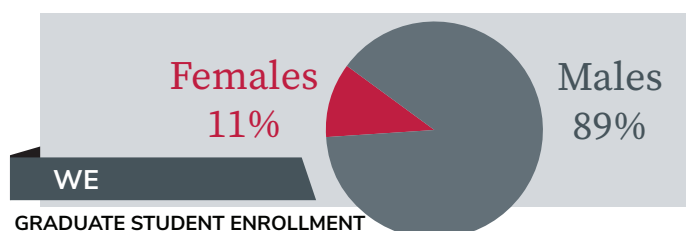
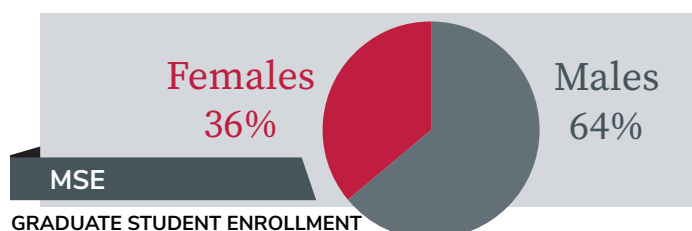
	Ariel Leonard, Assistant Professor Materials Science and Engineering Fontana Laboratories 4009 leonard.649@osu.edu Ph.D., University of Michigan 2018 In-situ synchrotron and electron microscopy techniques for mechanical behavior and microstructural evolution; Lightweight materials (Al, Mg); Alloy adaption for additive manufacturing; Integrated computational materials engineering	Characterization and microscopy Mechanical properties Metallic materials
	Jinghua Li, Assistant Professor Materials Science and Engineering Fontana Laboratories 3025 614-292-9743 li.11017@osu.edu Ph.D., Duke University 2016 Bioelectronics: thin-film materials and electronic devices that enable highly-sensitive, real-time and long-term monitoring of biophysical and biochemical information in relation to advanced healthcare	Biomaterials Polymers Sensor materials and tech
	Xun Liu, Assistant Professor Welding Engineering 118 EJTC 614-292-8915 liu.7054@osu.edu Ph.D., University of Michigan 2016 Solid state joining; Advanced manufacturing process; Materials characterization and modeling; 4D Printing	Mechanical properties Processing & manufacturing Welding engineering
	Jenifer Locke, Assistant Professor Materials Science and Engineering Fontana Laboratories 4006 614-292-5868 locke.121@osu.edu Ph.D., University of Virginia 2010 Corrosion and environmental fracture/cracking of metals and alloys; Thermo-mechanical processing effects on corrosion and environmental cracking	Corrosion Mechanical properties
	Alan Luo, Professor Materials Science and Engineering, Integrated Systems Engineering Fontana Laboratories 4020 614-292-5629 luo.446@osu.edu Ph.D., University of Windsor 1993 Advanced metallic materials for transportation applications; Manufacturing processes for light metals (Al, Mg, Ti); Solidification; Integrated computational materials eng	Computational MSE Mechanical properties Metallic materials Processing & manufacturing
	David McComb, Professor, Director of CEMAS Materials Science and Engineering 103 CEMAS 614-643-3462 mccomb.29@osu.edu Ph.D., Cambridge University 1990 Investigation of chemistry, structure and bonding in electronic, functional, nano- and bio-materials using advanced electron microscopy techniques	Biomaterials Characterization and microscopy Electronic, photonic, magnetic materials Energy materials
	Michael Mills, McDougal Professor, Chair of the Department Materials Science and Engineering Fontana Laboratories 2136 614-643-3463 mills.108@osu.edu Ph.D., Stanford University 1985 Intermetallic compounds; Metallic alloys; Mechanical properties; Microstructural characterization; High resolution Transmission Electron Microscopy	Characterization and microscopy Mechanical properties Metallic materials
	Patricia Morris, Associate Professor Materials Science and Engineering Fontana Laboratories 4013 614-247-8873 morris.692@osu.edu Ph.D., MIT 1986 Optimization of materials properties by processing to obtain unique defect, surface, nano- and micro-structures; Development of new materials and devices	Ceramic science and engineering Electronic, photonic, magnetic materials Sensor materials and tech

\$1.38 billion

Research expenditures at The Ohio State University

Fiscal Year 2022

	Roberto Myers, Professor Materials Science and Engineering, Electrical and Computer Engineering Fontana Laboratories 4016 614-547-9771 myers.1079@osu.edu Ph.D., University of California, Santa Barbara 2006 Electronic materials; Optical materials; Wide bandgap semiconductors; Atomic layer-by-layer synthesis; Optoelectronic characterization; Nanostructures materials; Magnetic materials; Spintronics; Multiferroic materials	Ceramic science and engineering Electronic, photonic, magnetic materials Energy materials
	Stephen Niezgoda, Assistant Professor Materials Science and Engineering Smith Laboratory 5058 614-292-7294 niezgoda.6@osu.edu Ph.D., Drexel University 2009 Crystal plasticity; Experimental and simulation co-design techniques; Computational material design tools; Materials data sciences; Structural materials; Materials processing; Materials mechanics	Computational MSE Mechanical properties Metallic materials Processing & manufacturing
	Boyd Pantan, Lincoln Electric Company Endowed Assistant Professor Welding Engineering 126 EJTC 614-687-8870 panton.7@osu.edu Ph.D., University of Waterloo, Canada 2016 Laser welding processes; Micro-welding; Welding process control; Dissimilar joining; Shape memory alloys	Processing & manufacturing Welding engineering
	David Phillips, Professor - Clinical Welding Engineering phillips.176@osu.edu Ph.D., The Ohio State University, 2008 Welding metallurgy of ferrous and non-ferrous alloys, solid-state welding processes, failure analysis of welds, robotics	Welding engineering
	Heather Powell, Associate Professor Materials Science and Engineering, Biomedical Engineering Fontana Laboratories 3024 614-247-8672 powell.299@osu.edu Ph.D., The Ohio State University 2004 Biomaterials; Tissue engineering; Wound healing; Biomechanics	Biomaterials Polymers
	Siddharth Rajan, Professor Materials Science and Engineering, Electrical and Computer Engineering 205 Drees 614-247-7922 rajan.21@osu.edu Ph.D., University of California, Santa Barbara 2006 High-speed and high-voltage transistors; Solid-state lighting; Lasers; Photovoltaics; Sensors	Electronic, photonic, magnetic materials Energy materials
	Antonio Ramirez, Professor and Director of Ma2JIC Center Welding Engineering 130 EJTC 614-292-8662 ramirez.49@osu.edu Ph.D., University of Sao Paulo, Brazil 2011 Additive manufacturing; Welded/joined metallic materials; Arc welding processes; Solid state processes; Friction stir welding	Characterization and microscopy Computational MSE Mechanical properties Metallic materials Processing & manufacturing Welding engineering



	<p>Salva Salmani-Rezaie, Assistant Professor Materials Science and Engineering CEMAS salmani-rezaie.1@osu.edu Ph.D., University of California-Santa Barbara 2021</p> <p>Electron microscopy; Quantum materials; Electronic materials, Complex oxides; Semiconductors; Structure-property relationship</p>	<p>Characterization and microscopy</p> <p>Electronic materials</p>
	<p>Michael Sumption, Professor Associate Director of Center for Superconducting and Magnetic Materials Associate Director of Superconducting Technology Center Materials Science and Engineering Fontana Laboratories 4008 614-688-3684 sumption.3@osu.edu Ph.D., Ohio University 1992</p> <p>Materials physics with a concentration in superconductive, electronic, and magnetic materials</p>	<p>Electronic, photonic, magnetic materials</p> <p>Energy materials</p>
	<p>Christopher Taylor, Research Associate Professor Materials Science and Engineering Fontana Laboratories taylor.2770@osu.edu Ph.D., University of Virginia 2006</p> <p>Corrosion modeling; Density functional theory; Simulation; Materials design; Lifetime prediction</p>	<p>Corrosion</p>
	<p>Gopal Viswanathan, Research Professor Materials Science and Engineering CEMAS 614-643-3468 viswanathan.11@osu.edu Ph.D., University of Cincinnati</p> <p>Experimental and theoretical in the area of structure/property relationship in structural and energy materials; Analytical electron microscopy techniques in the areas of diffraction, Hi-Resolution Microscopy, HAADF-STEM microscopy and EDS/EELS and X-Ray spectroscopy and image simulation methods</p>	<p>Characterization and microscopy</p>
	<p>Yunzhi Wang, Professor Materials Science and Engineering Smith Laboratory 5064 614-292-0682 wang.363@osu.edu Ph.D., Rutgers University 1995</p> <p>Phase transformation; Plastic deformation and microstructure – property relationship in structure; Functional materials</p>	<p>Computational MSE</p> <p>Mechanical properties</p> <p>Metallic materials</p> <p>Processing & manufacturing</p>
	<p>Wolfgang Windl, Professor Materials Science and Engineering Smith Laboratory 5066 614-247-6900 windl.1@osu.edu D.Sc., University of Regensburg 1995</p> <p>Computational materials science; Multi-scale modeling; Semiconductor process simulation</p>	<p>Computational MSE</p> <p>Energy materials</p> <p>Mechanical properties</p>
	<p>Wei Zhang, Professor Welding Engineering 120 EJTC 614-292-0522 zhang.3978@osu.edu Ph.D. Pennsylvania State University 2004</p> <p>Additive manufacturing (powder bed and blown-powder); Light-metal and dissimilar-metal joining for transportation; Creep-resistance steels and alloys for power generation; Modeling of welding and additive manufacturing processes and materials</p>	<p>Computational MSE</p> <p>Mechanical properties</p> <p>Processing & manufacturing</p> <p>Welding engineering</p>

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