



FACULTY AREAS OF EXPERTISE BY DEPARTMENT

| CHEMICAL ENGINEERING | | |
|--|---|--|
| NAME | CONTACT INFORMATION | RESEARCH INTERESTS AND EXPERTISE |
| Arce, Pedro Chair and Professor | parce@tntech.edu (931) 372-3267 | NANOSTRUCTURED MATERIALS - <i>With Functional Performance</i> (Health Care Engineering Applications: Hydrogels for clinical diagnostics, wound healing, math-assisted medicine, tissue scaffolds and assisted drug delivery) - MICRO- AND NANO-FLOWS in <i>Biophysical Systems</i> (Microcirculatory and renal system pathologies, arterial stenosis, kidney failure, etc.)- ENVIRONMENTAL CATALYSIS (Advanced oxidation in water, soil and air; photocatalytic clean energy production, electrokinetics-based remediation; battery and fuel cell materials) - ENGINEERING EDUCATION: (collaborative-, creative- and innovation-driven learning; constructionistic approaches) |
| Arias Chavez, Laura H. Assistant Professor | lchavez@tntech.edu (931) 372-3666 | Green Energy Production, Decentralized and Low Energy Water Treatment, Desalination, and Reclamation of Energy and Materials from Waste Streams. Fabrication of polymeric membranes for water treatment. |
| Biernacki, Joseph J. Professor | jbiernacki@tntech.edu (931) 372 3667 | Modeling of Multi-Scale Materials Systems Composite Concrete Systems |
| Ghorashi, Bahman Professor | bghorashi@tntech.edu (931)372-3224 | Blockchain Technology Applied to Chemical Industry; Agility and Agile Manufacturing - Mass Customization |
| Padmanabhan, Venkat Assistant Professor | vpadmanabhan@tntech.edu (931) 372-3606 | Self-assembly of nanoparticles in polymer matrix, polymer nanocomposite films for organic photovoltaics, and biomechanics of <i>Caenorhabditis elegans</i> |
| Rice, Cynthia A. Assistant Professor | crice@tntech.edu (931) 372-6059 | Direct Liquid Fuel Cells: Formic acid and methanol; Freeze Dynamics for PEMFC. Cathode catalyst Durability for automotive PEMFC; Electrochemical Diagnostics |
| Sanders, Robby Associate Professor | rsanders@tntech.edu (931) 372-2494 | Bio-assay Development, Drug delivery, Wound Healing |
| Stretz, Holly Professor | hstretz@tntech.edu (931)372-3495 | Research program in interfaces in 3-D printing, high-throughput on demand manufacturing of pharmaceuticals, nanomaterials as sensors, nanocomposite water treatment membranes. Expertise in polymer nanocomposites. |

CHEMICAL ENGINEERING CONTINUED

| NAME | CONTACT INFORMATION | RESEARCH INTERESTS AND EXPERTISE |
|--|-------------------------------------|---|
| Zhang, Liqun (Laura) Assistant Professor | lzhang@tntech.edu (931) 372-3474 | Molecular simulation on biomass modified asphalt, warm mix asphalt; simulations and modeling on structure and dynamics of human beta defensin type 3, interaction with lipid membranes and receptors. |

CIVIL AND ENVIRONMENTAL ENGINEERING

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|--|--|--|
| Badoe, Daniel A. Professor | dbadoe@tntech.edu (931) 372-3490 | Urban Travel Demand Modeling; Transportation Data Collection; Travel Behavior Analysis |
| Click, Steven Associate Professor | sclick@tntech.edu (931) 372-6464 | Traffic signal design, timing, operations, and analysis. Traffic signal system design, timing, operations, and analysis. Non-traditional intersection design, operations, and analysis. Non-traditional interchange design, operations, and analysis. Highway traffic simulation modeling. |
| Crouch, L. K. Professor | lcrouch@tntech.edu (931) 372-3196 | Concrete, Aggregates, Flowable Fill |
| Datta, Tania Assistant Professor | tdatta@tntech.edu (931) 372-3446 | Environmental Microbiology, Resource Recovery from Organic Waste, Role of Microbes in Aquatic Ecosystems |
| Henderson, Craig Professor | chenderson@tntech.edu (931)372-3062 | Masonry, concrete and steel testing and design. Structural dynamics and earthquake engineering. Computational structural modeling. |
| Huddleston, David Professor | dhuddleston@tntech.edu (931) 372-3486 | Computational Design Coupling CFD with Nonlinear Optimization, Water Resources Engineering, Open-Channel Flows, Fluid Mechanics, applied Aerodynamics |
| Huff, Tim Assistant Professor | thuff@tntech.edu (931) 372-3605 | Earthquake engineering, seismic design of structures, ground motion selection and modification for structural analysis, nonlinear analysis of structures in practice, seismic isolation, bridge design |
| Huo, Sharon Associate Provost for Tech and Professor | xhuo@tntech.edu (931) 372-3463 | Structural Analysis; Reinforced Concrete Design; Prestressed Concrete Design; Structural Steel Design; Bridge Design |
| Kalyanapu, Alfred Associate Professor | akalyanapu@tntech.edu (931) 337-3561 | Climate Impacts; Computational Hydraulics and Hydrology; Hydraulic/Hydrologic Modeling Urban Water Management; Regional Scale Flood Modeling and Simulation |

CIVIL AND ENVIRONMENTAL ENGINEERING CONTINUED

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|--|---|---|
| Liu, Jane Professor | jliu@tntech.edu (931) 372-3256 | Composite Materials; Vibration Analysis, Plates & Shells; Computational Mechanics Symbolic Computer Systems in Engr. Applications; Computational Algebraic Geometry in Nonlinear Structural Analysis |
| Mohr, Benjamin Chair and Associate Professor | bmohr@tntech.edu (931) 372-3454 | Durability, microstructure, and chemistry of cement-based materials; early-age behavior of cement and concrete; fiber-reinforced concrete; supplementary cementitious materials |
| Oswalt, Jessica Interim Associate Dean for Academic Affairs for the College of Engineering and Professor | joswalt@tntech.edu (931) 372-3782 | Engineering management including engineering economics, project management, process improvement, and systems modeling |
| Otuonye, Francis Assoc. VP Research for Tech and Professor | fotuonye@tntech.edu (931) 372-3374 | Geotechnical engineering, Mining engineering; health and safety impacts |
| Ramirez, Guillermo Associate Professor | gramirez@tntech.edu (931) 372-3261 | Theoretical and computational mechanics, mathematical formulation and corresponding computer implementation to describe the electro-mechanical behavior of solids under different types of environments |
| VandenBerge, Daniel Assistant Professor | dvandenberge@tntech.edu (931) 372-3257 | Rapid Drawdown Stability Analysis using the Finite Element Method |
| Weathers, Lenly Associate Professor | lweathers@tntech.edu (931) 372-3539 | Transport of Pollutants in the Environment; Transformation of Chlorinated Compounds; Oxidized Metals and other Pollutants in Anaerobic Environments in the Presence of Metallic Iron |

COMPUTER SCIENCE

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|--|---|---|
| Eberle, William (Bill) Associate Professor | weberle@tntech.edu (931) 372-3278 | Graph-Based Anomaly Detection |
| Elizandro, David Professor | delizandro@tntech.edu (931) 372-3386 | Institutional Leadership, Strategic Planning, Systems Integration and Effectiveness |

COMPUTER SCIENCE CONTINUED

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|---|---------------------------------------|--|
| Gannod, Gerald Chair and Professor | jgannod@tntech.edu (931) 372-3691 | Software reverse engineering, web and mobile development (specifically web services in enterprise computing), predictive analytics, visualization, and Agile approaches for computing education. |
| Ghafoor, Sheikh Professor | sghafoor@tntech.edu (931) 372-3687 | Middleware for Heterogeneous HPC, Linear Algebra Library for Machine Learning, Secure Resource Management for HPC, Malware Detection and Prevention, Computer Science Education |
| Kosa, Martha Associate Professor | mjkosa@tntech.edu (931) 372-3579 | Theoretical Problems in Distributed Computing |
| Rahman, Mohammad Assistant Professor | marahman@tntech.edu (931) 372-3525 | Network and information security analytics and automation, policy verification and threat analytics, risk assessment and security hardening, dependable management of cyber-physical systems |
| Scott, Stephen Professor | sscott@tntech.edu (931) 372-6484 | Cloud, Cluster, and Grid computing, Resilient high performance distributed, heterogeneous, and parallel computing |
| Siraj, Ambareen Director, Cybersecurity Education, Research and Outreach Center and Professor | asiraj@tntech.edu (931) 372-3448 | Cyber Security in Smart grid, Network Intrusion detection, Situational Awareness in Security, Security Education |
| Talbert, Doug Associate Professor | dtalbert@tntech.edu (931) 372-6178 | Artificial Intelligence, Data Analytics, Health Information Data Analysis |

ELECTRICAL AND COMPUTER ENGINEERING

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|--|--|--|
| Alouani, Ali T. Professor | aalouani@tntech.edu (931) 372-3383 | Sensor fusion, Fuzzy Logic Control, Mechatronics Systems |
| Austen, Jeffrey R. Associate Professor | jausten@tntech.edu (931) 372-2485 | Digital Signal Processing, Telecommunications, Computer Aided Engineering |
| Belkacemi, Rabie Associate Professor | rbelkacemi@tntech.edu (931) 372-3626 | Smart Grid (Power and Energy Systems) |
| Bhattacharya, Indranil Assistant Professor | ibhattacharya@tntech.edu (931) 372-3352 | High-Efficiency Solar Cells, Battery (Li-air/ion, Al-air/ion); Semiconductor Electronics; Photonics and Optics; Electromagnetics, Power Electronics; Medical Electronics |
| Bruce, J.W. Associate Professor | jwbruce@tntech.edu (931)372-3453 | data converter architectures, embedded and cyber-physical systems design, quantum computing logic systems, integration of unmanned aerial vehicles in the national airspace, and engineering education |

ELECTRICAL AND COMPUTER ENGINEERING CONTINUED

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|---|--|---|
| Bruce, Lori Provost, VP for Academic Affairs and Professor | lbruce@tntech.edu (931) 372-3224 | Remote sensing, image analysis, artificial intelligence, data analytics, hyperspectral imaging and precision agriculture |
| Carnal, Charles Professor | charleslc@tntech.edu (931) 372-3858 | Robot Control Systems, Statistical Signal Analysis |
| Hasan, Syed Assistant Professor | shasan@tntech.edu (931) 372-3462 | Reliable VLSI Circuit Design; Low Power Wireless; Sensor Network Nodes; Asynchronous VLSI Circuits; Probabilistic Formal Verification of Algorithms |
| Johnson, Wayne Professor, Emeritus | wjohnson@tntech.edu (931) 372-3397 | Electronics Manufacturing, Extreme Environment Electronics |
| Mahajan, Satish Interim Chair, Director of Center for Energy Systems Research and Professor | smahajan@tntech.edu (931) 372-3760 | Lasers; LEDs; Solar Cells; Optical Fibers, High Power Switchgear, Power Systems |
| Mahmoud, Mohamed Associate Professor | mmahmoud@tntech.edu (931) 372-3677 | Network Security and Privacy Preservation |
| Ojo, Joseph O. Professor | jojo@tntech.edu (931) 372-3869 | Electric Machine Analysis and Design; Adjustable; Speed Motor Drives; Power Electronic Convertors; Control Theory Applied to Power Electronics and Power Systems, Power Systems Economics and Deregulation Issues |
| Qiu, Robert Professor | rqui@tntech.edu (931) 372-3847 | Cognitive Radio Network, Wireless Tomography, Smart Grid Communications, Big Data, Concentration of Measure |
| Radman, Ghadir Professor | gradman@tntech.edu (931) 372-3520 | Smart Grid, Integration of renewable energy sources, Power system operation/control |

GENERAL AND BASIC ENGINEERING

| NAME | CONTACT INFORMATION | RESEARCH INTERESTS AND EXPERTISE |
|---|--|---|
| Craven, Kristine Associate Professor | kcraven@tntech.edu (931)372-6027 | |
| Wells, S. Michael Assistant Professor | mwells@tntech.edu (931) 372-3829 | Motivation Student Success, Retention |
| Wilson, Christopher Chair and Associate Professor | chriswilson@tntech.edu (931) 372-3216 | Composite Materials Testing, Materials Properties, Simulation |

| MANUFACTURING AND ENGINEERING TECHNOLOGY | | |
|--|--------------------------------------|---|
| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
| Elsawy, Ahmed H. Chair and Professor | aelsawy@tntech.edu (931) 372-3238 | Development of Manufacturing Processing, Welding Engineering and Metallurgy, Recycling and Reuse of Industrial Solid Waste Materials, Web-based Distance Learning, Computer Applications in Technology, Solar and wind renewable energies |
| Fidan, Ismail Professor | ifidan@tntech.edu (931) 372-6298 | Electronics Manufacturing, Additive Manufacturing, Renewable Energy, STEM Education and Distance Learning/Remote Laboratories |
| Kamal, Ahmed Associate Professor | akamal@tntech.edu (931) 372-6438 | Power Electronics Systems, Embedded Control System, Sensor and Biosensor, Digital Signal Processing, Biomedical System, System Identification |
| Kim, Duckbong Assistant Professor | dkim@tntech.edu (931) 372-3327 | Advanced manufacturing technologies, such as additive manufacturing, smart manufacturing and data analytics, sustainable manufacturing, wire+arc additive manufacturing (WAAM), super alloy and high entropy alloy (HEA). |
| Vondra, Fred L. Professor | fvondra@tntech.edu (931) 372-3527 | Metal Casting Processes, Foundry Tooling Materials, Industrial Maintenance |

| MECHANICAL ENGINEERING | | |
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| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
| Abounassif, Ahmed R. Instructor | aabounassif@tntech.edu (931) 372-6028 | Computational Fluid Dynamics, Eulerian Multiphase Flow Simulations |
| Anton, Steve Assistant Professor | santon@tntech.edu (931) 372-3287 | Smart Materials, Piezoelectric Sensing, Structural Health Monitoring, Biomedical Sensing, Energy Harvesting, 3D Printing, Robotics-Based STEM Education |
| Canfield, Stephen Professor | scanfield@tntech.edu (931) 372-6359 | Mobile Robot Platforms, Solid Mechanics, Optimization of Compliant Mechanisms |
| Chen, Pinggen Assistant Professor | pchen@tntech.edu (931) 372-3310 | Modeling, Diagnostics, and Control of Dynamic Systems, Internal Combustion Engines; After treatment Systems, Automotive System Control |
| Cui, Jie Professor | jiēcui@tntech.edu (931) 372-3357 | Computational Fluid Dynamics, Turbulence Modeling, Large Eddy Simulation, Numerical Heat Transfer, Thermal Fluids |
| Cunningham, Glenn T. Associate Professor | gcunningham@tntech.edu (931) 372-3826 | Energy Efficiency, Balance of Plant Energy Systems, Thermal Systems |
| Darvennes, Corinne Professor | cdarvennes@tntech.edu (931) 372-3253 | Acoustics, NDE using Ultrasonics, Noise Measurement and Remediation |

MECHANICAL ENGINEERING CONTINUED

| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
|---|---|--|
| Hoy, Darrell Interim Dean, College of Engineering and Professor | dhoy@tntech.edu (931) 372-3172 | Experimental Stress Analysis; Photoelasticity; Strain Gages; Optical Stress Analysis; Biomedical Stress Analysis |
| Idem, Stephen Professor | sidem@tntech.edu (931) 372-3607 | Scale Model Testing, Fluid Flow Measurement, Thermal Modeling, Fluid Mechanics, Heat Transfer |
| Languri, Ethan Assistant Professor | elanguri@tntech.edu (931) 372-6790 | Thermal Energy Storage Systems, Heat Transfer Fluid Enhancement, Evaporation in Porous Media, Industrial Energy Efficiency, Combined Heat and Power Systems, Numerical Modeling |
| Motevalli, Vahid Associate Dean for Research and Innovation and Professor | vmotevalli@tntech.edu (931) 372-3172 | Hybrid-electric vehicle systems and power- train; combustion and fire safety; aviation and transportation safety and security |
| Pardue, Sally Associate Professor | spardue@tntech.edu (931) 372-6573 | Random Vibrations; Modal Analysis; Non-destructive Evaluation (NDE); Machine Design |
| Rao, Mohan Chair and Professor | mr Rao@tntech.edu (931) 372-3254 | Vibrations, Acoustics, Noise Control, Damping Design, Sound Quality and Auditory Engineering |
| Sundaram, Meenakshi R. Professor | msundaram@tntech.edu (931) 372-3790 | Product Design and Development, Production, Systems Design and Operations Management, Lean Manufacturing and Process Improvements, Economic Analysis and Cost Justification |
| Ting, Kwun-Lon Professor | kting@tntech.edu (931) 372-3230 | Mechanism Design, Kinematics, Machine Design, Gearing, Robotics, Dynamics of Machines |
| Vaselbehagh, Ahmad Assistant Professor | avaselbehagh@tntech.edu (931) 372-6468 | Hydrodynamics of mechanical energy storage technologies, particularly, underwater energy storage plants |
| Wilson, Christopher Associate Professor | chriswilson@tntech.edu (931) 372-3216 | Composite Materials Testing, Materials Properties, Simulation |
| Wilson, Dale Professor | dwilson@tntech.edu (931) 372-3323 | Fracture Mechanics, Failure Analysis, Machine Design, MEMS, Mechanical Properties of Materials |
| Zhang, Ying Director, Center for Manufacturing Research and Professor | yzhang@tntech.edu (931) 372-3969 | High-Temperature Protective Coatings for Gas Turbine Engine Applications, Materials Synthesis via Chemical Vapor Deposition/Pack Cementation / Electrodeposition, and High-temperature Oxidation and Corrosion |

| MECHANICAL ENGINEERING CONTINUED | | |
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| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
| Zhang, Yunbo (Will) Assistant Professor | yuzhang@tntech.edu (931) 372-3272 | Design for Additive Manufacturing, Computer-aided Design and Manufacturing, Human-centered Design and Manufacturing, and Geometric and Solid modeling |
| Zhu, Jiahong (John) Professor | jzhu@tntech.edu (931) 372-3186 | Solid Oxide Fuel Cell, Zn-Air Batteries, High-Temperature Alloys, Processing of Ceramic, Intermetallic and Metallic Coatings |
| CENTER FOR ENERGY SYSTEMS RESEARCH | | |
| NAME | CONTACT INFORMATION | RESEARCH INTEREST AND EXPERTISE |
| Van Neste, Charles Research Assistant Professor | cvanneste@tntech.edu (931) 372-3682 | Alternative forms of energy generation and transmission with a major focus in wireless and quasi-wireless power transfer, high frequency inverter design, electronic instrumentation, and electromagnetic interactions |

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