








2022 EU-US FRONTIERS OF ENGINEERING

Hotel Park, Bled, Slovenia

October 19-22, 2022

PARTICIPANT LIST

**2022 EU-US Frontiers of Engineering
Participant List**

	<p>Erih Arko Manager Robotic Application Development YASKAWA Slovenia Erih.Arko@yaskawa.eu</p>	Industrial, Manufacturing, and Operational Systems Engineering
<p>I develop applications in industrial automation, robotic welding, control systems design, and electrical design.</p>		
	<p>Jan Bitenc (Speaker) Research Associate National Institute of Chemistry, Slovenia Slovenia Jan.bitenc@ki.si</p>	Materials Engineering
<p>I develop multivalent batteries, which span electrochemistry, organic synthesis, and application of various characterization techniques, like IR spectroscopy, electron microscopy, and X-ray photo-electron spectroscopy.</p>		
	<p>Mark Blenner Associate Professor Department of Chemical and Biomolecular Engineering University of Delaware United States blenner@udel.edu</p>	Chemical Engineering
<p>My research group addresses big problems in sustainability, human health, national defense, and space exploration using synthetic biology, metabolic engineering, genomics and systems biology, and protein engineering. We work mostly in eukaryotic systems (non-model yeast and mammalian cells) as well as microbial communities.</p>		
	<p>Johannes Brozovsky Research Scientist Architecture, Materials and Structures SINTEF Community Norway johannes.brozovsky@sintef.no</p>	Civil & Environmental Engineering
<p>Key research areas are building physics, the urban microclimate and urban physics in general, thermal building simulation, zero emission buildings and neighborhoods, and indoor and outdoor comfort.</p>		
	<p>Laura Cabrera Associate Professor Department of Engineering Science and Mechanics Pennsylvania State University United States lyc5332@psu.edu</p>	Special Fields and Interdisciplinary Engineering
<p>My research is at the intersection of the brain, technology, and ethics. I explore the ethical and societal implications of advances in neuroscience and neurotechnologies for the health of individuals and societies, with a focus on attitudes and ethical concerns of professionals, patients, and members of the public toward brain interventions.</p>		

**Yue Cao**

Assistant Professor
 School of Electrical Engineering and Computer Science
 Oregon State University
 United States
 yue.cao@oregonstate.edu

Electric Power/Energy Systems
 Engineering

We perform fundamental research of power electronics, motor drives, and energy storage; applications in electric aircraft, heavy-duty unmanned aerial vehicles, microgrids, smart grids, energy-efficient buildings, solar, and wave energy; emerging machine learning enabled power system design optimization; and electric-thermal integrated systems.

**Patricia Capsi Morales**

Post-doctoral Research Fellow
 Department of Informatics, Neuroprosthetics and Human-centered
 Robotics
 Technical University of Munich
 Germany
 patricia.capsi-morales@tum.de

Materials Engineering

I focus on the application of soft synergy-based robotics technologies in upper-limb prostheses. In particular, I investigate human motor control, especially for the existence of synergistic actuation signals and coordinated patterns in grasping and manipulation, together with soft robotic technologies and impedance modulation.

**Amrit Chandan**

Co-Founder
 Aceleron
 United Kingdom
 amrit@aceleronenergy.com

Chemical Engineering

My focus is on the circular economy, batteries, and fuel cells.

**Neil Dasgupta (Committee Member)**

Associate Professor
 Department of Mechanical Engineering
 University of Michigan
 United States
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Mechanical Engineering

I develop scalable, low-cost techniques for the synthesis and assembly of nanostructures to address energy-related environmental challenges, with an emphasis on new nanomanufacturing tools and design methodologies for the deterministic control of 3-D hierarchical nanostructures for energy conversion. Example applications include solar photovoltaics, artificial photosynthesis, catalysts, and batteries.

**Catherine De Wolf (Speaker)**

Professor
 ETH Zurich
 Switzerland
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Civil & Environmental
 Engineering

I explore how we can adopt digital technologies in architecture, engineering, and construction and analyze how we can shift towards a circular paradigm.



Robert Dominko (Committee Member)

Materials Engineering

Professor
University of Ljubljana
Slovenia
robert.dominko@ki.si

I research and develop new batteries, solid-state electrochemistry, active materials, characterization techniques and concepts in energy storage, and sustainable battery concepts.



Austin Downey

Aerospace Engineering

Assistant Professor
Department of Mechanical Engineering
University of South Carolina
United States
austindowney@sc.edu

I focus on the control of structures operating in extreme dynamic environments through investigating real-time machine learning, model updating, decision-making, and control methodologies at the sub-millisecond timescale. This research builds on experience in sensor development, multifunctional materials, structural control, embedded systems, damage detection, and energy storage.



Michael Eggleston

Electronics, Communication and
Info Systems Engineering

Research Group Leader
Data & Devices, AI Research Lab
Nokia Bell Labs
United States
michael.eggleston@nokia-bell-labs.com

An optical device physicist at heart, my research has included investigation into ultra-wideband wireless technologies, solar cells, environmental sensing, optical coherence tomography, low-power optical interconnects and devices, and integrated multi-wavelength lasers. My current research interests include battery-less sensing, non-invasive biochemical monitoring, and human-machine interfaces.



Albin Engholm

Industrial - Manufacturing &
Operational Systems
Engineering

PhD candidate
Integrated Transport Research Lab
KTH Royal Institute of Technology
Sweden
aengholm@kth.se

I model and analyze emerging technologies in road freight transport.



Nora Efram (Committee Member)

Special Fields and
Interdisciplinary Engineering

Senior Director for Research
American Council for an Energy-Efficient Economy
United States
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My research focuses on technology and policy strategies for energy efficiency and decarbonization.



Nicholas Faenza
Managing Engineer
Materials & Corrosion Engineering
Exponent
United States
nfaenza@exponent.com

Materials Engineering

I focus on improving the safety and performance of lithium-ion battery materials, cell design, their implementation into battery-containing products, emerging battery technologies, and key energy storage applications such as transportation and grid-storage.



Carlos Florensa (Speaker)
Research Scientist
Covariant.AI
United States
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Computer Science & Engineering

I research reinforcement learning for self-improving real robotic systems and materials handling in logistics.



Ariel Furst
Cook Career Development Assistant Professor
Department of Chemical Engineering
Massachusetts Institute of Technology
United States
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Chemical Engineering

We combine electrochemical methods with biomolecular and materials engineering to address challenges in human health and environmental sustainability. We develop new technologies to combat antimicrobial resistance, detect disease, and improve bioenergy technologies.



Bostjan Genorio
Associate Professor
Department of Materials and Polymer Engineering, Faculty of Chemistry
and Chemical Technology
University of Ljubljana
Slovenia
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Chemical Engineering

I work in materials science and organic chemistry, materials functionalization, graphene-based materials, proton-exchange membrane fuel cells, electrolyzers, and rechargeable batteries.



Francesco Goia (Committee Member) – *unable to attend*
Professor
Department of Architecture and Technology
Norwegian University of Science and Technology
Norway
francesco.goia@ntnu.no

Electric Power/Energy Systems Engineering

I focus on building physics, including envelope, performance simulation, zero emissions, energy and environmental systems, and control and automation.



Shabnam Homaei
Research Scientist
Building and Installations
SINTEF Community
Norway
Shabnam.Homaei@sintef.no

Civil & Environmental
Engineering

I research zero emission buildings and neighborhoods, resilient building design, building design under uncertainty, and building performance simulation.



Janez Humar
Head of Strategic Innovation Programs
Strategic Innovation Department
Elektro-Slovenija (ELES)
Slovenia
Janez.Humar@Eles.si

Electric Power/Energy Systems
Engineering

As a member of strategic innovation division within transmission system operations at ELES, I am working in all fields involving integration of new technologies into existing business. My field of interest involves preparation of business plans and ideas concerning integration of renewable energy systems, energy storage, e-mobility, prosumer flexibility platforms to support operations of transmission system operators and distribution system operators.



Roderick Jackson (Speaker)
Laboratory Program Manager
Building Technology
National Renewable Energy Laboratory
United States
Roderick.jackson@nrel.gov

Mechanical Engineering

I research, develop, and market implementation activities that improve the energy efficiency of building materials and practices. I also coordinate with the US Department of Energy to expand research of grid-interactive efficient buildings and mechanical and thermal building material properties.



Neera Jain
Associate Professor
School of Mechanical Engineering
Purdue University
United States
neerajain@purdue.edu

Mechanical Engineering

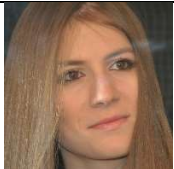
My research focuses on dynamical behavior and control of engineered and human systems using analytical and computational modeling, optimal control, and experimental validation. I have contributed new frameworks for modeling and estimation of human cognitive dynamics and complex thermofluid phenomena and control co-design algorithms for novel thermal management systems.



Marko Jost
 Assistant Professor
 Laboratory of Photovoltaics and Optoelectronics
 Faculty of Electrical Engineering
 University of Ljubljana
 Slovenia
 Marko.Jost@fe.uni-lj.si

Electric Power/Energy Systems
 Engineering

My research is in photovoltaics, with a special focus on perovskite-based solar cells. I have experience with material deposition, solar cell fabrication and characterization, and optimization using optical modelling. My goal is to contribute towards efficient, affordable, and widespread use of solar power.



Natalija Katic
 Research Assistant
 Institute Mihajlo Pupin, Belgrade
 Serbia
 natnatkatic@gmail.com

Bioengineering

I use neuroscience techniques and animal experiments to restore sensory feedback through computational modeling of nerves and afferent activation.



Eric Kazayak
 Assistant Professor
 Department of Mechanical Engineering
 University of Wisconsin
 United States
 kazayak@umich.edu

Mechanical Engineering

I build understanding and improve performance of sustainable energy storage/conversion systems and materials using a range of characterization and synthesis techniques, with a special focus on elucidating the dynamic behaviors of interfaces with in situ and operando techniques.



Mandana Khanie
 Assistant Professor
 Department of Environmental and Resource Engineering
 Technical University of Denmark
 Denmark
 masak@dtu.dk

Civil & Environmental
 Engineering

My research and teaching focuses on indoor environment quality and use of lighting and daylighting. In recent years I have been working on projects including façade strategies for prevented overheating and maximum daylight use, daylighting potentials in residential buildings, integrated lighting and daylighting control system strategies, a novel gaze-driven photometry for observing natural gaze behavior in relation to conditions constrained by real world luminous environment, and development of a preliminary mathematical model (GRL) for gaze response predictions in relation to light.



Haegyum Kim
 Staff Scientist
 Materials Sciences Division
 Lawrence Berkeley National Laboratory
 United States
 haegyumkim@lbl.gov

Materials Engineering

I design materials based on fundamental structure-property relationships for energy storage and conversion, including rechargeable batteries, supercapacitors, and fuel cells. We also characterize in situ and in operando multi-modal structures for understanding chemical and electrochemical reactions.



Cristiana Lara (Committee Member)

Industrial - Manufacturing &
Operational Systems
Engineering

Senior Research Scientist
GDS-Modeling and Optimization
Amazon
United States
larcrist@amazon.com

My research focuses on optimal infrastructure planning, including timing-aware design of logistics network, centralized-distributed facility location, and power systems generation expansion planning. I focus on decomposition approaches for solving these large-scale optimization problems efficiently in face of discrete decisions, non-convexities, integration of planning and scheduling, and optimization under uncertainty.



Lan Luan (Speaker)

Bioengineering

Assistant Professor
Department of Electrical and Computer Engineering
Rice University
United States
lan.luan@rice.edu

I develop long-lasting, bi-directional neural interfaces that monitor and control neurons at a large scale and high precision, and I use cutting-edge neurotechnology to advance fundamental understanding of neurological disorders.



Lauren Marbella

Chemical Engineering

Assistant Professor
Department of Chemical Engineering
Columbia University
United States
lem2221@columbia.edu

I focus on energy storage and conversion, operando characterization techniques, and magnetic resonance spectroscopy.



Daniel McCurry

Civil & Environmental
Engineering

Assistant Professor
Astani Department of Civil and Environmental Engineering
University of Southern California
United States
dmccurry@usc.edu

We study and develop means to eliminate wastewater contaminants and prevent unwanted byproduct formation, using tools from organic and analytical chemistry. My research group's overall goal is to make recycled water safer than ordinary tap water and promote its wider adoption as a sustainable means of overcoming potable water scarcity.



Matthew McDowell (Speaker)

Materials Engineering

Associate Professor
Department of Mechanical Engineering, Materials Science and Engineering
Georgia Institute of Technology
United States
mattmcdowell@gatech.edu

My research focuses on understanding and controlling the electro-chemo-mechanical properties of materials for energy conversion and storage.

**Lisa Melander (Committee Member)**

Assistant Professor
 Division of Supply and Operations Management
 Chalmers University of Technology
 Sweden
 lisa.melander@chalmers.se

Industrial - Manufacturing &
 Operational Systems
 Engineering

My overall research area is within supply chain management, which focuses on collaboration between actors in networks. My research interests include sustainable freight transport, green innovation, and innovative purchasing.

**Sabbie Miller**

Associate Professor
 Department of Civil and Environmental Engineering
 University of California, Davis
 United States
 sabmil@ucdavis.edu

Civil & Environmental
 Engineering

I advance materials engineering to mitigate environmental and health burdens that meet performance goals. Specific expertise includes cementitious materials, bio-derived plastics, greenhouse gas emissions and sinks, local human health burdens from emissions and toxins, resource scarcity, and methods for multi-objective materials and systems design.

**Joze Moskon**

Researcher
 D10 Department of Materials Chemistry
 National Institute of Chemistry
 Slovenia
 joze.moskon@ki.si

Special Fields and
 Interdisciplinary Engineering

I study electrochemical systems for energy storage, with a focus on studies of local transport and kinetic processes as well as thermodynamic phenomena in novel battery systems (Li-ion, Li-Sulfur, Organic cathodes in multi-valent systems). I specialize in combining standard electrochemical techniques with electrochemical impedance spectroscopy to explore interfacial phenomena.

**Partha Mukherjee (Speaker)**

Professor
 School of Mechanical Engineering
 Purdue University
 United States
 pmukherjee@purdue.edu

Mechanical Engineering

I research electrochemical energy storage and conversion, mesoscale computational physics and stochastics of physicochemical transport, chemistry, thermal, and mechanics interactions; and processing-microstructure-property relationships in energy materials and manufacturing.

**Spyros Ntemiris (Speaker)**

Project Leader
 Cluster and Innovation
 Business Region Göteborg
 Sweden
 Spyridon.Ntemiris@businessregion.se

Special Fields and
 Interdisciplinary Engineering

I focus on electric mobility within the scope of social, economic, and environmental sustainability. I have led multi-project academic and government organizations in sustainability backcasting, stakeholder management, and policy making.



Maria Paz Ochoa

Chemical Engineering

Associate Research Scientist
Machine Learning, Optimization and Statistics - Core R&D
Dow Chemical Company
United States
MPOchoa@dow.com

I focus on turnaround planning optimization at different scales; portfolio planning optimization; integrated decision support systems for sustainability goals; novel research approaches to conduct optimization under uncertainty for applications ranging from pharmaceutical production processes to production scheduling; uncertainty quantification through global sensitivity analysis; and dynamic optimization for reactor network design and control of bioreactor systems and rigid polyol production.



Amy Orsborn (Committee Member)

Bioengineering

Assistant Professor
Departments of Electrical Engineering and Bioengineering
University of Washington
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aorsborn@uw.edu

I research motor brain-machine interfaces and the role of neural plasticity and system adaptation in neurological therapies.



Nagore Ortiz Vitoriano (Speaker)

Materials Engineering

Electrochemical Energy Storage
CIC Energigune
Spain
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I research design of electrode materials for energy applications (e.g. graphene); electrolytes for battery applications; solvation chemistry; rechargeable batteries (metal-air/ion); chemistry method development; mechanisms, dynamics, kinetics and catalytic chemical reactions; in-operando techniques (e.g. spectroscopy) applied to battery systems; and surface, interface, and interphase analysis.



Chethan Pandarinath (Speaker)

Bioengineering

Assistant Professor
Department of Biomedical Engineering
Emory University and Georgia Institute of Technology
United States
chethan.pandarinath@emory.edu

I apply electrical engineering principles and artificial intelligence to study the nervous system and design assistive devices for people with neurological disorders or injuries.



Cristina Piazza (Speaker)

Bioengineering

Assistant Professor
Department of Informatics
Technical University Munich
Germany
cristina.piazza@tum.de

I research rehabilitation and assistive robotics, human movement, artificial device design based on soft robotics technologies, and innovative control algorithms to address different levels of amputation.



Stanisa Raspopovic (Committee Member)

Bioengineering

Professor
Department of Health Sciences and Technology
ETH Zurich
Switzerland
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My area of interest is neuroengineering.



Jonathan Sauder

Mechanical Engineering

Deputy Manager
Office of Technology Infusion
Jet Propulsion Laboratory
United States
Jonathan.Sauder@jpl.nasa.gov

I develop mission-enabling deployable antennas, apertures, and mechanical systems for earth science and planetary SmallSats from whiteboard to flight delivery.



Karma Sawyer (Speaker)

Mechanical Engineering

Division Director
Electricity Infrastructure and Buildings
Pacific Northwest National Laboratory
United States
karma.sawyer@pnnl.gov

I shape strategy and develop and deploy innovative solutions in materials for building energy efficiency technologies, building-to-grid-integration, building system research, thermal energy storage, and energy equity.



Nitin Sharma

Bioengineering

Associate Professor
Joint Department of Biomedical Engineering
University of North Carolina Chapel Hill and North Carolina State University
United States
nsharm23@ncsu.edu

My research draws upon control theory, robotics, ultrasound imaging, and neuroscience to design rehabilitation engineering solutions for people with mobility disorders to stand up and walk again. We develop application-motivated theory, design assistive devices and novel imaging sensors, and validate clinical translation experiments.



Jakob Strømmand-Andersen (Speaker)

Civil & Environmental
Engineering

Partner and Director
Innovation and Sustainability
Henning Larsen
Denmark
jstr@henninglarsen.com

My work is focused on the holistic interplay between technology, architecture and modern technology, and how integrated design can form the basis for successful sustainable cities and buildings.



Vahid Tarokh (Symposium co-chair)

Rhodes Family Professor
Department of Electrical and Computer Engineering
Duke University
United States
vahid.tarokh@duke.edu

Electronics, Communication and
Info Systems Engineering

I pursue new formulations and approaches to getting the most out of datasets. My current focus is on representation, modeling, inference and prediction from data, such as determining how different people will respond to viral exposure, predicting rare events from small amounts of data, formulation and calculation of limits of learning from observations, and prediction of a macaque monkey's future actions from its brain waves.



Marko Topič (Symposium co-chair)

Professor
Laboratory of Photovoltaics and Optoelectronics
University of Ljubljana
Slovenia
marko.topic@fe.uni-lj.si

Electronics, Communication and
Info Systems Engineering

I research photovoltaics, optoelectronics, electronics, semiconductor materials, electron devices, electronic circuits, and reliability and maintainability.



Adam Torok

Professor
Budapest University of Technology and Economics
Hungarian Academy of Engineering
Hungary
torok.adam@kjk.bme.hu

Civil & Environmental
Engineering

I focus on emission modeling and regional and spatial analysis.



Cristina Torres-Machi

Assistant Professor
Department of Civil, Environmental & Architectural Engineering
University of Colorado Boulder
United States
Cristina.TorresMachi@colorado.edu

Civil & Environmental
Engineering

I seek to enhance the condition and resilience of infrastructure systems by developing data-driven, risk-based, and cost-effective methodologies that optimize decision-making in infrastructure management.



Veronica Villena (Speaker)

Associate Professor
Supply Chain Management
Arizona State University
United States
vhvillena@asu.edu

Industrial - Manufacturing &
Operational Systems
Engineering

My research focuses on how companies engage their global supplier network to achieve economic, environmental, and social outcomes. I work with leading sustainability companies in the automotive, electronics, consumer product, pharmaceutical, fashion, and food sectors on how they can diffuse their environmental and labor practices to their first-, second- and third-tier suppliers.



Chieh (Ross) Wang

R&D Associate
Buildings and Transportation Science Division
Oak Ridge National Laboratory
United States
cwang@ornl.gov

Civil & Environmental
Engineering

I focus on the intersection of connected and autonomous vehicles, smart cities, and modeling, simulation, and controls. I create high-fidelity digital replicas of transportation systems (e.g., roads, traffic, signal controllers) and develop control strategies to optimize system operations.



Sihong Wang

Assistant Professor
Pritzker School of Molecular Engineering
University of Chicago
United States
sihongwang@uchicago.edu

Materials Engineering

I develop a new generation of human-integrated electronics that possess bio-mimetic and human-compatible physical/chemical properties and unprecedented functionalities. We create future-type wearable and implantable electronics that can serve as the technological platform for precision medicine, internet of things, and human-machine interfaces.



Yu Yang

Associate Professor
Department of Civil and Environmental Engineering
University of Nevada, Reno
United States
yuy@unr.edu

Civil & Environmental
Engineering

My research expertise is focused on the redox and complexation reactions of natural and anthropogenic organic carbon, with implications for carbon cycles, water reuse, and soil health. We strive to link the molecular-scale reactions with large-scale fate and transport of pollutants and carbon cycle.



Qi Zhang

Assistant Professor
Department of Chemical Engineering and Materials Science
University of Minnesota
United States
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Chemical Engineering

I research process systems engineering, sustainability, and computational optimization.

National Academy of Engineering

John Anderson
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Guest

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Mayor of Bled

Slovenian Academy of Engineering

Mark Pleško
President
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Radovan Stanislav Pejovnik
Professor Emeritus, University of Ljubljana
Past President, Slovenian Academy of Engineering
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Irena Lengar
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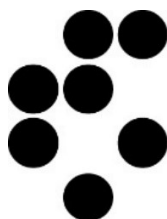
Plinovodi
Povezani z energijo



YASKAWA

**NUKLEARNA
ELEKTRARNA KRŠKO**

Pipenbaher Consulting Engineers



Institut "Jožef Stefan", Ljubljana, Slovenija