Academia



Kevin Osborn, LPS at the University of Maryland, Adjunct Associate Professor of Physics

I am an experimental expert on superconducting circuits for improved computing; for example, in the area of QIS my group studies custom resonators and qubits to understand decoherence mechanisms better, including two-level systems which appear as defects. For digital computing, my group has invented and is experimentally studying a new digital logic type which is physically ballistic and is promising in the metrics of energy efficiency and timing requirements.



Tiina Salmi, Tampere University, Academy Research Fellow, Docent in Applied Superconductivity

Research Interests/Areas of Expertise: Superconducting magnet technologies (accelerator magnets, HTS magnets), especially areas related to quench protection and modeling.



Shahriar Hossain, University of Queensland, School of Mechanical and Mining Engineering, Associate Professor

Research interest: Nano-structure engineered functional materials (synthesis and characterisation of superconducting, magnetic and piezoelectric materials) and device fabrication.



Naoyuki Amemiya, Kyoto University, professor of Electrical Engineering

Research Interests: Electromagnetic phenomena in superconductors (ac losses, stability); power applications of superconductors; medical and biological applications of superconductors.

National and government labs



Ken Marken, Department of Energy (DOE), Office of High Energy Physics, Program Manager

Dr. Ken Marken is a Program Manager in the DOE Office of High Energy Physics with a portfolio of accelerator R&D grants in superconducting materials, magnets, and SRF technology as well as SBIR/STTR awards across the range of accelerator technology. He is a materials scientist with 15 years experience at Oxford Instruments developing LTS and HTS conductors for high field magnets and 6 years at Los Alamos National Laboratory leading development of HTS for electric power systems at the Superconductivity Technology Center.



Stephen Gourlay, Lawrence Berkeley National Laboratory (LBNL), former senior staff scientist

Senior Scientist at Lawrence Berkeley National Laboratory (Retired)

Nearly 30 years working on the development of superconducting accelerator magnets at two national laboratories.



Kathleen Amm, Brookhaven National Lab, Director Magnet Division

Dr. Amm is leading a team of engineers and scientists transforming the future of superconducting magnet technology with the development of high field magnets to study the mysteries of the universe and enable advanced magnet technologies for industry through technology transfer.



Peter Hopkins, Physicist/Project Leader in the Superconductive Electronics Group at the National Institute of Standards and Technology in Boulder, CO.

Peter Hopkins (Physics PhD, Harvard, 1990) is leading a group of research scientists working on superconductive electronics for applications including quantum computing, advanced wireless communications, and high-speed, energy-efficient computing. Prior to this civil-service position, he worked in the data storage industry for 20 years, working on product teams that designed, proto-typed, and tested hard disk drives and solid-state drives.



Hsiao-Mei (Sherry) Cho, Lead Scientist in Fundamental Physics Directorate (FPD), Deputy Lead of Quantum Foundry for Q-NEXT, SLAC National Lab

Fascinated by Josephson equations, I have been producing novel superconducting devices and sensors for various applications ranging from medical application to cosmology. The excitement of measuring some that couldn't be done with other technology is another intriguing factor for me. My long involvement in cosmology led to the wafer scale production in superconducting Transition-Edge Sensors (TES). Currently, I involve in a novel superconducting quantum device

for Dark Matter search with DMRadio collaboration, TES and SQUIDs fabrication for CMB-S4, superconducting quantum devices fabrication with Q-NEXT center, and building detector microfabrication facility cleanroom including tool procurement.



Susana Izquierdo Bermudez, CERN, Scientific Staff

Susana Izquierdo Bermudez is currently a staff scientist in the Superconducting Magnets and Cryostats Group at the European Organization for Nuclear Research (CERN) in Geneva. After graduating in Energy and Mechanical Engineering at the University Carlos III of Madrid, Leganes, Spain, in 2010, she joined the CERN Magnet group to work on the preparation activities for the Large Hadron Collider (LHC) First Long Shut down. In 2012 she started working in the Magnet Design and Technology Section, on the development of high field Nb3Sn accelerator magnets. Since 2020, she is responsible for the Nb3Sn inner triplet quadrupole magnets for the HiLumi LHC.

Industry



Ofer Naaman, Google Quantum AI, Staff Research Scientist

Dr. Naaman is currently at Google Quantum AI working on hardware for qubit readout. His background is in superconducting electronics, including SFQ, cryogenic memory, microwaves, and quantum computing. Dr. Naaman holds a PhD in physics from UCSD (2003), and he was postdoc at NIST and Berkeley. Prior to joining Google he was at Northrop Grumman.



Ben Bryant, Oxford Instruments Nanoscience, senior development engineer

Dr. Bryant's work focuses on R&D for superconducting magnets. He holds a PhD in condensed matter physics from University College London. He was postdoc at Delft University of Technology (TU Delft), doing scanning probe microscopy. Before joining Oxford Instruments in

2019, he was a fellow at the High Field Magnet Laboratory, Nijmegen, developing ultra-high field scanning probe microscopy as well as other condensed matter physics experiments, and running user experiments.



Erica Salazar, Commonwealth Fusion Systems, Magnet Systems Lead

Erica Salazar has devoted much of her career to the development of innovative superconducting magnet technology for fusion energy applications. Erica is currently a Magnet Systems Lead in the R&D division of Commonwealth Fusion Systems where she focuses on high temperature superconducting magnets and quench detection systems. Erica received her doctoral degree in the Department of Nuclear Science and Engineering at MIT working at the Plasma Science and Fusion Center. Her doctoral research focused on high temperature superconducting magnet design and research for the SPARC project. Erica has 9+ years of experience working with superconducting magnets for fusion applications. Prior to MIT, Erica worked at General Atomics as a mechanical engineer and process manager on the ITER Central Solenoid superconducting magnet manufacturing project. She commissioned and managed the reaction heat treatment process for the 120 ton, Nb3Sn superconducting modules. Additionally, Erica supported the design, commissioning, and operation of the final test station-where the fully manufactured module is to be tested under 4K cryogenic conditions at full current (40 kA). Although Erica gained a lot of experience and knowledge from her work on the ITER Central Solenoid project, she looks forward to making an impact in the fusion and superconducting community with the SPARC project.



Franco Moriconi, VIER Inc., VP of Engineering

Mechanical Engineer by training, Moriconi is responsible for the technology development at VEIR. Expertise: 20+ years in design and development of innovative Power Products, and solutions applied to the Power Grid.

Early in his career, Moriconi was part of the ABB Corporate Research Group, in Europe and in the US, where for 10 years he worked on Research & Development of solutions applied to:

GIS - High-Voltage Gas Insulated Switchgear, 138 kV and above.

Power Transformers and Short- Circuit design of Power Transformers Medium Voltage breakers technology and Fault Current Interrupting technologies.

His work on Superconductivity applied to Power Products and the Grid goes back to the work he did on SUPERCONDUCTING FAULT CURRENT LIMITERS (FCL for SHORT) with the

ZENERGY POWER company and support from DOE (Department of Energy) and the CEC (California Energy Commission). He was Principal Investigator in 2009 and 2010 for FLC Projects sponsored by the HTS Program of DOE.

In the past, he was also an Active Member of IEEE and CIGRE Working Groups, developing guidelines for testing SFCL and test techniques common to HTS Superconducting Power applications.

Achievements:

- developed, tested, and installed in Grid a 12kV Superconducting FCL for Southern California Edison at the AVANTI CIRCUIT OF THE FUTURE in Los Angeles.
- designed a 138kV FCL for American Electric Power, in Columbus Ohio.
- developed a commercial MV SFCL for ASL (APPLIED SUPERCONDUCTOR LIMITED). The first design was an 11kV/1200A SFCL for a project with Northern Powergrid at a substation in the Scunthorpe area of Yorkshire.
- designed a second Superconductive FCL for the same company for an installation in Sheffield (Jordanthorpe Network): a 33kV-800A nominal/2000A overcurrent, capable of 40% fault current reduction.

In recent years he also developed experience in designing microgrids and deploying and commissioning C&I Commercial and Industrial large solar + storage systems.