

Berkeley Sensor & Actuator Center (BSAC)

BSAC, the NSF (National Science Foundation) Industry/University Cooperative Research Center for Microsensors & Microactuators (MEMS), was founded in 1986 to conduct commercially relevant interdisciplinary engineering research on micro- and nano-scale sensors, moving mechanical elements, microfluidics, materials, and processes that take advantage of progress made in integrated-circuit, bio, and polymer technologies.



Berkeley Sensor & Actuator Center
The University of California BERKELEY
The University of California DAVIS
<http://bsac.berkeley.edu>

BSAC co-Directors (PI's) and Department

Executive Director John M. Huggins
Prof. Bernhard E. Boser EE
Prof. David Horsley ME, UC Davis
Prof. Luke P. Lee* BioE
Prof. Dorian Liepmann BioE
Prof. Liwei Lin ME
Prof. Richard S. Muller EE
Prof. Clark C.-T. Nguyen EE
Prof. Albert P. Pisano ME
Prof. Kristofer S.J. Pister EE
Prof. Richard M. White EE
Prof. Ming C. Wu EE

Center Statistics

119 Graduate Researchers
21 Post-Doctoral Research Leaders
11 Faculty Directors
14 co-Advising Faculty Affiliates
48 Industrial Member Organizations
102 Reported Projects

Current Research Areas (# Projects)

Processes, Packaging, Microassembly
(23 projects)
Wireless & RF Devices
(13 projects)
BioMEMS
(15 projects)
Microfluidics
(14 projects)
Power/Energy Generation
(5 projects)
Physical Sensors, Actuators, Robotics
(16 projects)
MicroPhotonics & Adaptive Optics
(14 projects)
CAD, Microrobotics, Other
(2 projects)
Nano-Micro Interfaces (many of the above)

Some Example Projects

- MEMS-on-finished CMOS processes
- Injection Molded ElectroFluidics Package
- Piezo-Actuated (AIN) UHF Resonators
- Networks of coupled HiQ RF Resonators
- SERS-CD Platform for Quantitative Biomedicine
- Fully Integrated Magnetic Immunosensor
- Optoelectronic Tweezers for Cell Preparation
- Bubble Time-of-Flight Flow Sensor
- Biomass Powered Energy Harvester
- Integrated In-Chamber Oxygen Sensor
- Sub-milliwatt Vibratory Gyroscope
- Tribology E-Test Device for MEMS
- Silicon Carbide Sensors for Harsh Environments
- Fast MEMS Phase-Shifting Interferometer
- Nano Photodetectors
- MEMS-based Microrobots