**Massachusetts Institute of Technology**
ACC ............... Advanced Concepts Committee (MIT LL)
CAES .............. Center for Advanced Engineering Study
ChE ............... Department of Chemical Engineering
ChemE ............. Department of Chemical Engineering
CICS .............. Center for Integrated Circuits and Systems
CIPS .............. Center for Integrated Photonic Systems
CML ............... Cambridge-MIT Institute
CMSE .............. Center for Materials Science and Engineering
CSR ............... Center for Space Research
DMA ............... Dupont-MIT Alliance
DMSE .............. Department of Materials Science and Engineering
EECS .............. Department of Electrical Engineering and Computer Science
HST ............... Health Sciences and Technology, Harvard-MIT
ICL ............... Integrated Circuits Laboratory
ISN ............... Institute for Soldier Nanotechnologies
ITRC .............. Intelligent Transportation Research Center
LEES .............. Laboratory for Electromagnetic and Electronic Systems
LMF ............... Leaders for Manufacturing
MIG ............... Microsystems Industrial Group
MIT ............... Massachusetts Institute of Technology
MNSL ............. Micro & Nano Systems Laboratory
MPC ............... Materials Processing Center
MTL ............... Microsystems Technology Laboratories
NSL ............... NanoStructures Laboratory
RLE ............... Research Laboratory of Electronics
SMA ............... Singapore-MIT Alliance
SML ............... Space Microstructures Laboratory
SOE ............... School of Engineering
TRL ............... Technology Research Laboratory
UROP ............. Undergraduate Research Opportunities Program

**Private Industry**
AMD ............... Advanced Micro Devices
CSDL ............. Charles Stark Draper Laboratory
HP ................. Hewlett-Packard
IBM ............... International Business Machines Corporation
KIMM .............. Korea Institute of Machinery and Materials
MARCO ............ Microelectronics Advanced Research Corporation
C2S2 ............. Center for Circuits and Systems Solutions
GSRC ............. Gigascale Systems Research Center
IFC ............... Interconnect Focus Center
MSD ............... Center for Materials, Structures and Devices
MGH ............... Massachusetts General Hospital
NTT ............... Nippon Telephone and Telegraph
SIA ............... Semiconductor Industry Association
SRC ............... Semiconductor Research Corporation
TI ................. Texas Instruments

**Government**
AFOSR .......... U.S. Air Force Office of Scientific Research
AFRL .......... Air Force Research Laboratories
ARDA .......... Advanced Research and Development Activity
ARL .......... Army Research Laboratories
ARO MURI .... Army Research Office M
CSE .......... Consortium on Superconducting Electronic
DARPA .......... Defense Advanced Research Projects Agency
DOD .......... Department of Defense
DOE .......... Department of Energy
DURINT ........ Defense University Initiative on Nanotechnology
JPL .......... Jet Propulsion Laboratories
JSEP .......... Joint Services Electronics Program
LANL .......... Los Alamos National Laboratory
MDA .......... Missile Defense Agency
MRSEC .......... Materials Research Science and Engineering Center
MURI .......... Multi University Research Initiative
NASA .......... National Aeronautics and Space Administration
NCIPT .......... National Center for Integrated Photonics Technology
NDSEG .......... National Defense Science and Engineering Graduate
NIH .......... National Institutes of Health
NCI .......... National Cancer Institute
NCRR .......... National Center for Research Resources
NIDDK ........ National Institute of Diabetes and Digestive and Kidney Diseases
NIBIB .......... National Institute of Biomedical Imaging and BioEngineering
NHLBI .......... National Heart, Lung, and Blood Institute
NIST .......... National Institute of Standards and Technology
NOAA .......... National Atmospheric and Oceanographic Administration
NREL .......... National Renewable Energy Laboratory
NRL .......... Naval Research Laboratory
NSA .......... National Security Administration
NSF .......... National Science Foundation
CMSE .......... Materials Research Science and Engineering Centers
NIRT .......... Nanotechnology and Interdisciplinary Research Initiative
SGER .......... Small Grant for Exploratory Research
ONR .......... Office of Naval Research
**Other**

- CFI: CAD Framework Initiative
- CIE: Commission International de l'Eclairage
- CIM: Computer Integrated Manufacturing
- IEEE: Institute of Electrical and Electronics Engineers
- IEDM: International Electronic Devices Meeting
- IME: Institute of Microelectronics, Singapore
- IMEC: Interuniversity MicroElectronics Center
- MCNC: Microelectronics Center of North Carolina
- MRS: Materials Research Society
- NATO: North Atlantic Treaty Organization
- NTCIP: National Transportation Communications for Intelligent Transportation
- WiMAX: Worldwide Interoperability for Microwave Access, Inc.

**Technical**

- AAO: Anodic aluminum oxide
- ACEO: AC electro-osmosis
- ACPR: Adjacent channel power ratio
- ADC: Analog-to-digital converter
- AFM: Atomic force microscope
- ALD: Atomic layer deposition
- AMOL: Absorbance-two-wavelength scheme
- APCVD: Atmospheric pressure chemical vapor deposition
- ASIC: Application-specific integrated circuit
- BEOL: Back-end-of-line
- BER: Bit-error-rate
- BiCMOS: Bipolar complementary metal oxide semiconductor
- BPSK: Binary phase shift keying
- BPV: Back-propagation of variance
- BTBT: Band-to-band tunneling
- CAD: Computer aided design
- CATV: Category V
- CBSC: Comparator-based switched-capacitor circuit
- CCD: Charge couple device
- CCR: Critically coupled resonator
- CDR: Clock and data recovery
- CFB: Cartesian feedback
- CFT: Clock feed-through
- CML: Current mode latch
- CMOS: Complementary metal oxide semiconductor
- CMP: Chemical mechanical planarization
- CNT: Carbon nanotube
- COC: Cyclic olefin copolymer
- COIL: Chemical oxygen iodine laser
- CV: Capacitance voltage
- CVD: Chemical vapor deposition
- DAC: Digital-to-analog converter
- DBR: Dielectric Bragg reflector
- DCA: Dielectric continuum approximation
- DCP: Dielectrophoretic cell patterning
- D-CAP: Digitally-configurable analog processor
- DEM: Dynamic element matching
- DEP: Dielectrophoresis
- DHI: Digital holographic imaging
- DIBL: Drain-induced barrier lowering
- DPD: Digital predistortion
- DRIE: Deep reactive-ion etching

- DSP: Digital signal processing
- DUT: Devices-under-test
- ECG: Electrocardiogram
- EEG: Electroencephalogram
- EEPROM: Electrically erasable programmable read only memory
- EL: Electroluminescence
- EM: Electromagnetic
- ENOB: Effective number of bits
- EPD: Endpoint detection
- FACS: Flow-assisted Cell Sorting
- FDTD: Finite difference time domain
- FEOL: Front-end-of-line
- FET: Field-effect transistor
- FFT: Fast Fourier transform
- FIR: Finite impulse response
- FOM: Figure of merit
- FOV: Field of view
- FPGA: Field-programmable gate array
- GeOI: Germanium-on-insulator
- GMR: Giant magnetoresistance
- GOI: Germanium-on-insulator
- GP: Geometric programming
- HD: Harmonic distortion
- HDQ: Harmonic Differential Quadrature
- HEMT: High-electron mobility
- HIC: High-index-contrast
- HM: Herringbone mixer
- HOI: Heterostructure on insulator
- HSQ: Hydrogen silsesquioxane
- ICEO: Induced charge electro-osmosis
- IDE: Interdigitated electrodes
- IMD: Inter-modulation distortion
- INL: Integral nonlinearity
- ISI: Inter symbol interference
- ISM: Industrial, scientific, medical
- ITO: Indium-tin-oxide
- IV: Current voltage
- KOH: Potassium hydroxide
- LED: Light-emitting device
- LINC: Laboratory instrument computer
- LNA: Low noise amplifier
- LPCVD: Low pressure chemical vapor deposition
- LSB: Lower sideband
- MAA: Methacrylic acid
- MDLL: Multiplying delay-locked loops
- MEM: Micro-electro-mechanical
- M-HEMT: Metamorphic high-electron-mobility transistor
- MEMS: Micro-electro-mechanical systems
- MGA: Micro gas analyzer
- MMM: Methylmethacrylate
- MMSE: Minimum mean square error
- MMW: Millimeter-wave
- MOCVD: Metalorganic chemical vapor deposition
- MOR: Model-order-reduction
- MOS: Metal-oxide-semiconductor
- MOSFET: Metal-oxide-semiconductor field-effect transistor
ABBREVIATIONS

MPIE ..........Mixed-potential-integral-equation
MRAM ..........Magnetic-random-access memory
NEM ..........Nano-electro-mechanical
NIL ..........Nanoimprint lithography
NMOS ..........Negative-channel metal-oxide semiconductor
OEO ..........Optical-electronic-optical
OFDM ..........Orthogonal frequency division multiplexing
OFET ..........Organic field-effect transistor
OFF ..........Off
OHC ..........Outer hair cells
OLED ..........Organic light-emitting diode
OPL ..........Optical projection lithography
PA ..........Power amplifier
PAE ..........Power-added efficiency
PCR ..........Polymerase chain reaction
PDAC ..........Poly diallyldimethylammonium chloride
PDMS ..........Polydimethylsiloxane
PECVD ..........Plasma enhanced chemical vapor deposition
PEM ..........Proton exchange membrane; polymer electrolyte membrane
PFM ..........Pulse frequency modulation
PHEMT ..........Pseudomorphic high-electron mobility transistor
PHY ..........Physical layer
PIV ..........Particle image velocimetry
PL ..........Photoluminescence
PLL ..........Phase-locked loops
PMGI ..........Poly(methylglutarimide)
PMMA ..........Poly(methylmethacrylate)
PMOR ..........Parameterized model reduction
PMOS ..........Positive channel metal oxide semiconductor
PPM ..........Pulse-position modulated
PRF ..........Pulse-repetition frequency
PROM ..........Parameterized reduced-order models
PSV ..........Pseudo-spin-valve
PTM ..........Predictive technology models
QCL ..........Quantum-cascade laser
QD ..........Quantum dot
RC ..........Resonant cavity
RFID ..........Radio frequency identification
RIE ..........Reactive-ion etching
ROI ..........Regions of interest
RSM ..........Response surface model
RTNIL ..........Room-temperature nanoimprint lithography
RVHI ..........Rainbow volume holographic imaging
SAR ..........Successive approximation register
SAW ..........Surface acoustic wave
SBR ..........Saturable Bragg reflector
SCE ..........Short-channel Effects
SEBL ..........Scanning-electron-beam lithography
SEM ..........Scanning-electron microscope
SFDR ..........Spur-free dynamic range
SGM ..........Slanted groove mixer
SHM ..........Staggered herringbone mixer
SIMS ..........Secondary ion-mass spectrometry
SiNW ..........Silicon nano-wire
SiNWT ..........Silicon nanowire transistors
SMR ..........Suspended microchannel resonator
SMU ..........Sense-Measurement Unit
SNR ..........Signal-to-noise ratio
SOA ..........Semiconductor optical amplifier
SoC ..........System-on-chip
SOG ..........Singlet oxygen generator
SOI ..........Silicon on insulator
SOLES ..........Silicon on lattice-engineered substrate
SPLEBL ..........Spatial-phase-locked electron-beam lithography
SPM ..........Scanning probe micrograph
SRAM ..........Static random access memory
SSDSOI ..........Strained-silicon directly on insulator
STI ..........Shallow trench isolation
TAT ..........Trap-assisted tunneling
TDC ..........Time-to-digital
TDD ..........Threading dislocation density
TERS ..........Tip-enhanced Raman spectroscopy
TIPS ..........Thermal inkjet pico-fluidic drop dispensing system
TPV ..........Thermophotovoltaic
TTTDD ..........Time-temperature threading dislocation density
UHVCD ..........Ultra high vacuum chemical vapor deposition
ULSI ..........Ultra Large Scale Integration
UWB ..........Ultra-wideband
VCO ..........Voltage Controlled Oscillators
VCSEL ..........Vertical-cavity Surface-emitting Laser
VDG ..........Voltage from Drain to Gate
VLS ..........Vapor-liquid-solid
VLlsi ..........Very Large Scale Integration
VPR ..........Versatile Place and Route
VCSEL ..........Vertical-cavity surface-emitting laser
WLAN ..........Wireless gigabit local area network
WiGLAN ..........Wireless local area network
WSP ..........Water soluble particles
YSZ ..........Yttria-stabilized zirconia oxide
ZPAL ..........Zone-plate-array lithography

YSZ ..........Yttria-stabilized zirconia oxide
WLAN ..........Wireless local area network
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