

APPENDIX H. LIST OF ACRONYMS

AI	artificial intelligence	CNS	Center for Nanotechnology in Society
AICT	Advanced Institutes of Convergence Technology of Seoul National University	CNSE	Center for Nanoscale Science and Engineering (University at Albany)
AM	additive manufacturing	CPU	central processing unit
ARPA-E	Advanced Research Projects Agency, Energy (DOE)	CREATIV	Creative Research Awards for Transformative Interdisciplinary Ventures program (NSF)
ARPA-ED	Advanced Research Projects Agency, U.S. Department of Education	DARPA	Defense Advanced Research Projects Agency (U.S.)
ASU	Arizona State University	DBP	disinfection byproduct
ATE	Advanced Technological Education (NSF program for community colleges)	DFE	design for environment
ATR	Advanced Telecommunications Research Institute International (Japan)	DHS	U.S. Department of Homeland Security
BCI	brain–computer interaction	DIMP	desktop integrated manufacturing platform
BMI	brain–machine interface	DM	desktop manufacturing
BRAIN	Brain Research through Advancing Innovative Neurotechnologies initiative proposed by Administration for start in FY2014	DNA	deoxyribonucleic acid
BSE	Bovine spongiform encephalopathy (mad cow disease)	DOC	U.S. Department of Commerce
CAD	computer-assisted design	DOD	U.S. Department of Defense
CAISE	Center for Advancement of Informal Science Education	DOE	U.S. Department of Energy
CAS	Chinese Academy of Sciences	DOI	U.S. Department of the Interior
CEA	Atomic Energy and Alternative Energies Commission of France	DRAM	dynamic random-access memory
CC	Community College	DRL	Research on Learning in Formal and Informal Settings (NSF)
CCNE	Centers of Cancer Nanotechnology Excellence (NIH program)	EC	European Commission
CCS	carbon capture and storage	ECAST	Expert and Citizen Assessment of Science and Technology (network)
CCSB	Center for Cancer Systems Biology (at MIT)	ECCS	Electrical, Communications and Cyber Systems, NSF Div, Engineering Dir
CKT	converging knowledge and technology	EEG	electroencephalography
CKTS	Convergence of knowledge and technology with/to benefit/ society	EHR	electronic health records
CMOS	complimentary metal-oxide semiconductor	EHS	environmental, health, and safety (issues)
CNPP	Cancer Nanotechnology Platform Partnerships (NIH program)	ELSI	ethical, legal, and social implications (of a technology area)
CNRS	National Scientific Research Center of France	EPA	U.S. Environmental Protection Agency
		ERC	Engineering Research Center (NSF program)
		ETRI	Electronics and Telecommunications Research Institute (Korea)
		EU	European Union
		EUV	extreme ultraviolet

FCRP	Focused Center Research Program (SRC/US government program)	JST	Japan Science and Technology Agency
FDA	U.S. Food and Drug Administration	K-12	Kindergarten through high school education, covering students roughly 5-18 years of age
FET	field-effect transistor	K-14	Kindergarten through community college or technical school education
FES	functional electrical stimulation	K-20	Kindergarten through graduate school education
FET	frontier emerging technologies	KAIST	Korea Advanced Institute of Science and Technology
fJ	femtojoules	KANC	Korea Advanced Nano Center
fMRI	functional magnetic resonance imaging	KEITI	Korea Environmental Industry and Technology Institute
GCRP	Global Change Research Program	KERI	Korea Electrotechnology Research Institute
GDP	Gross Domestic Product	KI	David H. Koch Institute for Integrative Cancer Research at MIT
GEOSS	Global Earth Observation System of Systems	KIAS	Korea Institute for Advanced Study
GHG	greenhouse gas(es)	KIGAM	Korea Institute of Geology, Mining & Materials
GM	genetically modified	KIMM	Korea Institute of Machinery and Materials
GPU	graphics processing unit	KIST	Korea Institute of Science and Technology
GSCST	Graduate School of Convergence Science and Technology (Korea)	KISTEP	Korea Institute of Science and Technology Evaluation & Planning
HBCU	Historically Black Colleges and Universities	KIT	Karlsruhe Institute of Technology (Germany)
HRI	human-robot interaction	LCA	life-cycle analysis
HRCT	high-resolution computed tomography	MANA	International Center for Materials Nanoarchitectonics (Japan)
HSC	Health Science Center	MCDA	multicriteria decision analysis
ICBP	Integrative Cancer Biology Program (at MIT)	MEG	magnetoencephalography
ICT	information and communication technologies	MEMS	microelectromechanical
ICTAS	Institute for Critical Technology and Applied Science (Virginia Tech)	MEXT	Ministry of Education, Culture, Sports, Science and Technology (Japan)
IEA	International Energy Agency	MFA	material flow analysis
IGERT	Integrative Graduate Education and Research Traineeship Program (NSF)	MIT	Massachusetts Institute of Technology
IMEC	formerly the Interuniversity Microelectronics Centre in Belgium	MMO	massively multiplayer online (role-playing game)
INDEX	Institute for Nanoelectronics Discovery and Exploration (part of NRI)	MOOC	massively open online courses
INSPIRE	Support Promoting Interdisciplinary Research and Education program (NSF)	MOSFET	metal-oxide semiconductor field-effect transistor
IP	intellectual property	MOST	Ministry of National Science and Technology (China)
IPCC	Intergovernmental Panel on Climate Change	MRI	magnetic resonance imaging
ISE	informal science education		
IT	information technology		
ITRI	Industrial Technology Research Institute (Taiwan)		

MRS	magnetic resonance spectroscopy	NSEE	Nanoscale Science and Engineering Education
MRSEC	Materials Research Science and Engineering Center (NSF Program)	NSET	Nanoscale Science, Engineering, and Technology (S. Korean program)
MURI	Multidisciplinary University Research Initiative (DOD Program)	NSF	U.S. National Science Foundation
NACK	Nanotechnology Applications and Career Knowledge education network (Pennsylvania State University)	NSTA	National Science Teachers Association
NASA	U.S. National Aeronautics and Space Administration	NSTC	National Science and Technology Council (of the Executive Office of the President)
NBIC	Nano-, Bio-, Info-, Cognitive (science and technology fields; also, significant fields of convergence)	NUE	Nanotechnology Undergraduate Education (NSF Program)
NBIC2	(See NBIC) "Beyond" (more than) convergence of nano-, bio-, info-, and cognitive technologies	ODM	original design manufacturer
NCI	U.S. National Cancer Institute (NIH)	OECD	Organisation for Economic Co-operation and Development
NCLT	National Center for Learning and Teaching (Northwestern Center)	OMOP	Observational Medical Outcomes Partnership
NCN	Network for Computational Nanotechnology	ONAMI	Oregon Nanoscience and Microtechnologies Institute
NEGF	non-equilibrium Green's function	OSTP	Office of Science and Technology of the Executive Office of the President (U.S.)
NEMS	nanoelectromechanical	P4	predictive, participative, preventive, and personal medicine
NGO	nongovernmental organization	PARC	Palo Alto Research Center (Xerox)
NIH	U.S. National Institutes of Health	PB	planetary boundaries
NIMS	National Institute for Materials Science (Japan)	PC	personal computer
NISE Net	Nanoscale Informal Science and Engineering Network (U.S.)	PCAST	President's Council of Advisors on Science and Technology (U.S.)
NIST	U.S. National Institute for Standards and Technology	PCM	phase change materials
NITRD	National Information Technology Research and Development program	PEN	Program of Excellence in Nanotechnology (NIH Program)
NNI	National Nanotechnology Initiative	PES	Public Engagement with Science
NNIN	National Nanotechnology Infrastructure Network	PET	positron emission tomography
NOAA	National Oceanic and Atmospheric Administration (U.S.)	PI	principal investigator
NRC	National Research Council of the National Academies (U.S.)	PNNL	Pacific Northwest National Laboratory
NRI	Nanoelectronics Research Initiative (collaborative SRC research program with NSF and NIST)	PNS	Post normal Science
NRI	National Robotics Initiative	POU	point of use
NSEC	Nanoscale Science and Engineering Center (NSF Program)	PSM	phase shift mask
NSE	nanoscale science and engineering	PSOC	Physical Sciences Oncology Center (NIH, National Cancer Institute, Program)
		PV	photovoltaic
		R&D	research and development
		RD&D	research, development, and demonstration

RISA	Regional Integrated Sciences and Assessment (NOAA program)	STEM	Science, Technology, Engineering, and Mathematics (education)
RNA	Ribonucleic Acid	SUNY	State University of New York
S&E	science and engineering	SwA	software assurance
S&T	science and technology	SWAMP	SwA Market Place initiative (DHS)
SBIR	Small Business Innovation Research program (multiple U.S. agencies)	SWAN	Southwest Academy of Nanoelectronics (part of NRI)
SCI-C	Cognitive Society Initiative (proposed)	TC	Technical College
SciDAC	Scientific Discovery through Advanced Computing institutes (DOE)	tCMS	transcranial magnetic stimulation
SBIR	U.S. Small Business Innovative Research	TCNC	Tumor Cell Networks Center (at MIT)
SEES	Science, Engineering, and Education for Sustainability (NSF)	TCR	T-cell receptor
SHG	self-help group	UIC	University of Illinois, Chicago
SI ²	Software Infrastructure for Sustained Innovation (NSF)	UIUC	University of Illinois at Urbana-Champaign
SIA	Semiconductor Industry Association	UN	United Nations
siRNA	Small interfering RNA	UNC	University of North Carolina
SKKU	Sungkyunkwan University, Korea	USDA	U.S. Department of Agriculture
SME	small- and/or medium-scale enterprise	USGCRP	U.S. Global Change Research Program
S.NET	Society for the Study of Nanoscience and Emerging Technologies	USGS	U.S. Geological Survey
SRAM	static random-access memory	VLSI	very large-scale integration
SRC	Semiconductor Research Corporation	VOC	volatile organic compound
STC	Science and Technology Center (NSF program)	VoI	value of information
STDP	spike-timing-dependent plasticity	WPB	Working Party on Biotechnology of the OECD
STTR	Small Business Technology Transfer program (multiple U.S. agencies)	WPN	Working Party on Nanomaterials of the OECD
		WTEC	World Technology Evaluation Center.

WTEC Publications

WTEC Books:

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- Brain-Computer Interfaces: An International Assessment of Research and Development Trends.* Ted Berger (Ed.) Springer, 2008.
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- Environmentally Benign Manufacturing.* T. Gutowski and C. Murphy (Eds.) (4/2001).
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- NanoEHS Series: Capstone: Risk Management Methods & Ethical, Legal, and Societal Implications of Nanotechnology* (3/2010).
- Defense Nanotechnology Research and Development Program: Report to Congress* (12/2009).
- International assessment of R&D in Stem Cells for Regenerative Medicine and Tissue Engineering* (4/2008).
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- Nanotechnology in Space Exploration* (8/2004).
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