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APPENDIX E. GLOSSARY

1D	One-dimensional
2D	Two-dimensional
2DEG	Two-dimensional electron gas
2DES	Two-dimensional electron system
3D	Three-dimensional
AFM	Atomic force microscopy
AIST	(Japan) National Institute of Advanced Industrial Science and Technology
AMPS	(U.S./DARPA) Advanced Magnets for Power Systems program
AMR	Anisotropic magnetoresistance
APS	American Physical Society
ATIP	Asian Technology Information Program
ATM	(U.S./DARPA program) Advanced Thermoelectric Materials
ATP	(Japan) Angstrom Technology Partnership

BEEM	Ballistic electron emission microscopy
BEMM	Ballistic electron magnetic microscopy
BLS	Brillouin light scattering
BMBF	(Germany) Federal Ministry for Education and Research
BSCCO	Superconducting material composed of Bi (or Pb), Sr., Ca, Cu, and O
CAIBE	Chemically assisted ion beam etching
CBE	Chemical beam epitaxy
CCN	(Germany, U. of Hamburg) Center of Competence in Nanoscale Analysis
CEA	(France) Atomic Energy Commission
CENG	(France, part of CNRL) Nuclear Center
CIP	Current in the plane
CMOS	Complementary metal oxide semiconductor
CMR	Colossal magnetoresistance
CNRS	(France) Centre National de la Recherche Scientifique
CPP	Current perpendicular to the plane
CREST	(Japan/JST) Core Research for Evolutional Science and Technology
CV	Capacitance-voltage
CVD	Chemical vapor deposition
DARPA	(U.S.) Defense Advance Research Projects Agency
DBR	Distributed Bragg reflector
DERA	(UK) Defense Research and Development Agency
DFG	(Germany) National Science Foundation
DMS	Diluted magnetic semiconductor
DOD	(U.S.) Department of Defense
DOE	(U.S.) Department of Energy
DOE/BES	(U.S.) Department of Energy, Office of Basic Energy Sciences.
E-beam or e-beam	Electron beam
EBL	Electron beam lithography
EC	European Commission
EELS	Electron energy loss spectrometer
EEPROM	Electrically erasable programmable read-only memory
EMR	Electron magnetic resonance (see also EPR)
EPR	Electron paramagnetic resonance (see also EMR)
EPSRC	(UK) Engineering and Physical Sciences Research Council
ERATO	(Japan, JST) Exploratory Research of Advanced Technology
ESR	Electron spin resonance
EU	European Union
EXAFS	Extended X-ray absorption fine structure
fcc	face-centered cubic (crystal structure)
FAME	(U.S./DARPA program) Frequency Agile Materials for Electronics
FEG	Field emission gun
FENIKS	(UK) Ferromagnetic semiconductors and novel magnetic-semiconductor heterostructures for improved knowledge on spintronics
FeRAM	Ferroelectric random access memory
FET	Field effect transistor
FIB	Focused ion beam
FIS	Ferromagnet/insulator/semiconductor
FM	Ferromagnet
FMD	Ferromagnetic detector
FMRFM	Ferromagnetic resonance force microscopy
FN	Ferromagnetic nonmagnetic normal metal
F-N interface	Ferromagnetic-normal interface
FNF	Ferromagnet/normal metal/ferromagnet
FOM	(Holland) Foundation for Research on Matter
F-S interface	Ferromagnetic-semiconductor interface

FTIR	Fourier transform infrared (spectrometer)
GID	Grazing incidence diffraction
GIF	German-Israeli Foundation
GISAXS	Grazing incidence small-angle X-ray scattering
GMR	Giant magnetoresistance
GS	(informal) graduate student
IEEE	Institute of Electrical and Electronics Engineers
IR	Infrared
IRC	Interdisciplinary research center
ITRS	International Technology Roadmap for Semiconductors
I-V	Current-voltage
JAIST	Japan Advanced Institute of Science and Technology
JEMS	Joint European Magnetism Symposium
JMW 01	Joint UK Magnetism Workshop (2001)
JRCAT	(Japan) Joint Research Center for Atom Technology
JSPS	Japan Society for the Promotion of Science
JST	Japan Science and Technology Corporation
KAST	(Japan) Kanagawa Academy of Science and Technology
KKR-CPA	Korringa-Kohn Rostocker (method of) coherent potential approximation
KNAW	(Holland) Royal Netherlands Academy of Arts and Sciences
LCMI	(France, CNRL) Laboratory of High Magnetic Fields
LED	Light-emitting diode
LEED	Low energy electron diffraction
LPD-MBE	Liquid phase deposition molecular beam epitaxy
MARCH	(University of Hamburg) Microstructure Advanced Research Center Hamburg
MARTECH	Center for Materials Research and Technology, Florida State University
MBE	Molecular beam epitaxy
MCD	Magnetic circular dichroism
MEMS	Microelectromechanical systems
METI	(Japan) Ministry of Economy, Trade, and Industry (formerly MITI)
MFM	Magnetic force microscopy
MIS (diode)	Metal-insulator-semiconductor
ML	Monolayer
MOCVD	Metal organic chemical vapor deposition
MOKE	Magneto-optical Kerr effect
Monbu-kagakusho	(Japan) Ministry of Education, Culture, Sports, Science, and Technology (MEXT, formerly Monbusho and STA)
MO-SNOM	Magneto-optical scanning near field optical microscopy
MQC	Macroscopic quantum coherence
MQT	Macroscopic quantum tunneling
MR	Magnetoresistance
MRAM	Magnetic random access memory
MRFM	Magnetic resonance force microscopy
MRSEC	(U.S./NSF) Materials research science and engineering center
MTJ	Magnetoresistive tunnel junctions
NCCR	(University of Basel) National Nanoscience Center
ND	No date (in references)
NEDO	(Japan) New Energy and Industrial Technology Development Organization
NIST	(U.S.) National Institute of Standards and Technology
NMR	Nuclear magnetic resonance
NOL	Nanooxide layer
NRL	(U.S.) Naval Research Laboratories
NSF	(U.S.) National Science Foundation
NSOM	Near-field scanning optical microscopy
NVE	(U.S. company) Non-Volatile Electronics Corporation

ONR	(U.S.) Office of Naval Research
PL	Photoluminescence
PLA	Pulsed laser ablation
PLD	Pulsed laser deposition
QD	Quantum dot
QUIST	(U.S./DARPA program) Quantum Information Science and Technology
RHEED	Reflection high energy electron diffraction
RIE	Reactive ion etching
RIEC	(Japan, Tohoku University) Research Institute of Electrical Communication
RIKEN	(Japan) Institute of Physical and Chemical Research
SEM	Scanning electron microscopy
SEMPA	Scanning electron microscopy with polarization analysis
SET	Single electron transistor
SHG	Second harmonic generation
SPA-LEED	Spot profile analyzing low energy electron diffraction
SPIN-LED	Spin light-emitting diode
SPINS	(U.S./DARPA program) Spins in Semiconductors
SPS	Scanning probe spectroscopy
SP-STM	Spin-polarized scanning tunneling microscopy
SP-STs	Spin-polarized scanning tunneling spectroscopy
SQUID	Superconducting quantum interference device
STA	(Japan) Science and Technology Agency
STM	Scanning tunneling microscopy
STW	(Holland) Dutch Technology Foundation
T	Tesla
T_c	Temperature of coherence
TEM	Transmission electron microscopy
TIT	(Japan) Tokyo Institute of Technology
TMR	Tunneling magnetoresistance
UCSB	University of California, Santa Barbara
UCSD	University of California, San Diego
UHV	Ultra high vacuum
UKRI	United Kingdom and Republic of Ireland Chapter of IEEE
VSM	Vibrating sample magnetometer
XFS	X-ray fluorescence spectroscopy
XMCD	X-ray magnetic circular dichroism
XPS	X-ray photoelectron spectroscopy
XRD	X-ray diffraction