

Acronym List

2DE two-dimensional electrophoresis	HT high throughput
3DE three-dimensional electrophoresis	IA integrated assessment
ADP adenosine diphosphate	IB-PCR intact biofilm polymerase chain reaction
AFM atomic force microscopy	ICAT isotope-coded affinity tag
AI artificial intelligence	ICP inductively coupled plasma
AMT accurate mass and time	IPCC Intergovernmental Panel on Climate Change
ASCI Accelerated Strategic Computing Initiative (DOE National Nuclear Security)	IR infrared
ATP adenosine triphosphate	kDa kilodalton
BER Biological and Environmental Research, DOE	LC liquid chromatography
BLAST Basic Local Alignment Search Tool	LIMS laboratory information management system
CARS coherent anti-Stokes Raman spectroscopy	MALDI matrix-assisted laser desorption ionization
CCSP Climate Change Science Program	MEMS microelectromechanical systems
CCTP Climate Change Technology Program	MFA metabolic flux analysis
CPU central processing unit	MGP Microbial Genome Program
CryoEM cryoelectron microscopy	MPP massively parallel processing
CSLM confocal scanning laser microscopy	MRI magnetic resonance imaging
CSP Community Sequence Program, DOE Joint Genome Institute	mRNA messenger RNA
Da dalton	MS mass spectrometry
DNA deoxyribonucleic acid	MS/MS tandem mass spectrometry
DOE U.S. Department of Energy	MW megawatt
ELSI ethical, legal, and social issues	NABIR Natural and Accelerated Bioremediation Research
EPR electron paramagnetic resonance	NAD, NADH nicotinamide adenine dinucleotide, a carrier of electrons produced in biological oxidations
ERSD Environmental Remediation Sciences Division, DOE	NAE National Academy of Engineering
ESI electrospray ionization	NIH National Institutes of Health
EXAFS extended X-ray absorption fine structure	NLO nonlinear optics
FIE/L fluorescence emission/lifetime	NMR nuclear magnetic resonance
FISH fluorescence in situ hybridization	NSOM (also SNOM) scanning near-field optical microscopy
FIAsH fluorescein arsenical hairpin	OASCR Office of Advanced Scientific Computing Research, DOE
FLIM fluorescence lifetime imaging	OMB Office of Management and Budget
FRET fluorescence resonance energy transfer	OPH organophosphorus hydrolase enzyme
FT-IR Fourier transform infrared spectroscopy	ORF open reading frame
FTICR Fourier transform ion cyclotron resonance	OSTP Office of Science and Technology Policy, White House
FWHM full width at half maximum	PCR polymerase chain reaction
GC gas chromatography	PET positron emission tomography
GHG greenhouse gas	PSI photosystem I
Gt gigaton	PSII photosystem II
GTL Genomics:GTL	PV photovoltaic
GW gigawatt	QA quality assurance
H/D hydrogen-deuterium ratio	QC quality control
HGP Human Genome Program	Q-TOF quadrupole time-of-flight
	R&D research and development

Decimal Units Covered in this Roadmap

10^{+18}	exa
10^{+15}	peta
10^{+12}	tera
10^{+9}	giga
10^{+6}	mega
10^{+3}	kilo
10^0	
10^{-3}	milli
10^{-6}	micro
10^{-9}	nano
10^{-12}	pico
10^{-15}	femto
10^{-18}	atto

RC reaction center
RNA ribonucleic acid
rRNA ribosomal RNA
SANS small-angle neutron scattering
SAXS small-angle X-ray scattering
SC Office of Science, DOE
SEC size exclusion chromatography
SEM scanning electron microscopy
SHM second harmonic microscopy
SPM scanning probe microscopy
SPR surface plasmon resonance
sRNA small RNA
STEM scanning transmission electron microscopy
STM scanning tunneling microscopy
TEAP terminal electron accepting process
TEM tunneling or transmission electron microscopy
TIR total internal reflection (type of microscopy using visible light)
TMSE theory, modeling, simulation, and experimentation
UV ultraviolet
UV-vis ultraviolet visible
UV-CD ultraviolet-circular dichroism
WAXS wide-angle X-ray scattering

