Brunauer-Emmett-Teller method

UF	BET method
BT	adsorption
RT	surface phenomena
PT	adsorption
CC	A6845D Adsorption and desorption kinetics; evaporation and condensation
	A8265M Sorption and accommodation coefficients (surface chemistry)
DI	January 2023

cellulose

BT	polymers
RT	biodegradable materials
	paper
	paper industry
	paper pulp
	polymer fibres
PT	polymers
CC	A3620 Macromolecules and polymer molecules
	A6140K Structure of polymers, elastomers, and plastics
	A8120S Preparation of organic materials, polymers and plastics
	A8235 Polymer reactions and polymerization
	E1710 Engineering materials
	E3620 Paper and pulp industries
DI	January 2023

colour gamut

UF	color gamut
BT	colour
RT	colour displays
	image colour analysis
	light sources
	printing
DI	January 2023

colour temperature

UF	color temperature
BT	colour
RT	blackbody radiation
	temperature
PT	colour
DI	January 2023

conditional random fields

BT	graph theory
	random processes
	statistical analysis
RT	computer vision
	feature extraction
	image segmentation
	learning (artificial intelligence)
	natural language processing
	text analysis
PT	graph theory
	random processes
	statistical analysis
CC	A0210 Algebra, set theory, and graph theory
	A0250 Probability theory, stochastic processes, and statistics
	B0240Z Other topics in statistics
	B0250 Combinatorial mathematics
	C1140Z Other topics in statistics
	C1160 Combinatorial mathematics
	E0210J Statistics
	E0120E Combinatorial mathematics
DI	January 2023

data augmentation

BT	data handling
RT	computer vision
	deep learning (artificial intelligence)
	feature extraction
	image classification
	learning (artificial intelligence)
	medical image processing
	neural nets
	pattern classification
PT	data handling
CC	A0650 Data handling and computation
	C6130 Data handling techniques
DI	January 2023

diffuse reflectance spectra

BT	reflectivity
	spectra
RT	diffuse reflectance spectroscopy
PT	reflectivity
	spectra
CC	A7800 Optical properties and condensed matter spectroscopy and other interactions of matter with particles and radiation
DI	January 2023

diffuse reflectance spectroscopy

BT	reflectivity
	spectra
RT	diffuse reflectance spectra
PT	reflectivity
	spectra
CC	A7800 Optical properties and condensed matter spectroscopy and other interactions of matter with particles and radiation
DI	January 2023

digital twins

UF	virtual twins
BT	CAD
	engineering graphics
RT	artificial intelligence
	augmented reality
	computer simulation
	cyber-physical systems
	data analysis
	design engineering
	engineering computing
	Internet of Things
	product design
	production engineering computing
	solid modelling
	systems engineering
	virtual reality
CC	C6130B Graphics techniques
	C6130V Virtual reality
	C7400 Engineering computing
	E0410 Information technology applications
	E14 Design
DI	January 2023

edge computing   *[promoted lead-in]*

UF	fog computing
BT	distributed processing
RT	5G mobile communication
	cloud computing
	computer networks
	Internet
	Internet of Things
	mobile computing
	resource allocation
PT	distributed processing
CC	B6210L Computer communications
	B6250F Mobile radio systems
	C5620 Computer networks and techniques
	C6190 Distributed systems software
DI	January 2023

electron backscatter diffraction

UF	EBSD
BT	electron backscattering
	electron diffraction
RT	crystal microstructure
	deformation
	grain boundaries
	grain size
	scanning electron microscopy
PT	electron backscattering
	electron diffraction
CC	A6114 Electron determination of structures
	A6480G Microstructure
DI	January 2023

energy Internet

BT	power systems
RT	cloud computing
	electric power generation
	Internet
	Internet of Things
	power distribution
	power engineering computing
	power system control
	power system interconnection
	power system management
	power transmission
PT	power systems
CC	B8110 Power systems
	B8120 Power transmission, distribution and supply
	B8200 Generating stations and plants
	C7410B Power engineering computing
DI	January 2023

graph neural networks

UF	GNN
	graph neural nets
BT	graph theory
	neural nets
RT	convolutional neural nets
	data visualisation
	deep learning (artificial intelligence)
	feature extraction
	pattern classification
	recommender systems
	supervised learning
PT	graph theory
	neural nets
CC	B0250 Combinatorial mathematics
	B1295 Neural nets (circuit implementations)
	C1160 Combinatorial mathematics
	C1230D Neural nets (theory)
	C5190 Neural net devices
	C6264 Neural nets
DI	January 2023

high-resolution transmission electron microscopy

UF	HRTEM
BT	transmission electron microscopy
RT	transmission electron microscopes
PT	transmission electron microscopy
CC	a0780 Electron and ion microscopes and techniques
	A6116 Other determination of structures
DI	January 2023

human activity recognition

UF	human action recognition
	human motion recognition
BT	pattern recognition
RT	accelerometers
	alarm systems
	assisted living
	behavioural sciences
	behavioural sciences computing
	biomechanics
	body area networks
	body sensor networks
	fall detection
	geriatrics
	image motion analysis
	image recognition
	learning (artificial intelligence)
	medical image processing
	medical signal processing
	safety systems
	security
	signal processing
	smart phones
	surveillance
	video signal processing
	video surveillance
	wearable sensors
CC	A8745D Physics of body movements
	A8760 Medical and biomedical uses of fields, radiations, and radioactivity; health physics
	A8770 Biomedical engineering
	B6135E Image recognition
	B6140 Signal processing and detection
	B7510 Biomedical measurement and imaging
	B7550 Biomedical communication
	C5260 Digital signal processing
	C5260B Computer vision and image processing techniques
	C5260D Video signal processing
	C7330 Biology and medical computing
	C7810 Social and behavioural sciences computing
DI	January 2023

hydrolysis

BT	chemical exchanges
RT	biochemistry
	biotechnology
	catalysis
	dissociation
	enzymes
	solvation
PT	chemical reactions
CC	A8230 Specific chemical reactions; reaction mechanisms
DI	January 2023

land surface ice

BT	ice
RT	climatology
	glaciology
	snow
PT	ice
CC	A9240S Land surface ice
DI	January 2023

laser pulses

UF	laser pulsing
BT	laser beams
RT	high-speed optical techniques
	lasers
PT	laser beams
CC	A4260F Laser beam modulation, pulsing and switching; mode locking and tuning
	A4280W Ultrafast optical techniques
	B4330B Laser beam modulation, pulsing and switching; mode locking and tuning
DI	January 2023

logistic regression   *[promoted lead-in]*

UF	logit models
	ordered logit models
BT	regression analysis
RT	learning (artificial intelligence)
	pattern classification
	support vector machines
PT	regression analysis
CC	A0250 Probability theory, stochastic processes, and statistics
	B0240V Regression analysis
	C1140V Regression analysis
	E0210J Statistics
DI	January 2023

metal-organic frameworks

UF	MOF
BT	organic-inorganic hybrid materials
RT	porous materials
PT	organic-inorganic hybrid materials
CC	A6175N Structure of organic-inorganic hybrid materials (inc. perovskite hybrids)
	A8100 Materials science
	A8120X Preparation of organic-inorganic hybrid materials
DI	January 2023

multi-armed bandit problems

UF	K-armed bandit problems
	N-armed bandit problems
BT	optimisation
	reinforcement learning
	statistical distributions
RT	game theory
	Markov processes
	resource allocation
	scheduling
	stochastic processes
PT	optimisation
	reinforcement learning
	statistical distributions
CC	A0250 Probability theory, stochastic processes, and statistics
	B0240Z Other topics in statistics
	B0260 Optimisation techniques
	C1140Z Other topics in statistics
	C1180 Optimisation techniques
	C1230L Learning in AI (theory)
	C6263 Reinforcement learning
	E0210G Optimisation
	E0210J Statistics
	E0410 Information technology applications
DI	January 2023

nanoantennas

BT	nanotechnology
	optical antennas
RT	integrated optics
	integrated optoelectronics
	metamaterial antennas
	molecular communication (telecommunication)
	nanocommunication (telecommunication)
	nanoelectromechanical devices
	nanoelectronics
	nanophotonics
	nanostructured materials
	nanotube devices
	optical communication equipment
	optical metamaterials
	plasmonics
	terahertz metamaterials
PT	metamaterial antennas
	nanophotonics
CC	B5270 Antennas
DI	January 2023

natural gas

BT	fossil fuels
RT	air pollution
	hydrocarbon reservoirs
	natural resources
	organic compounds
	pulverised fuels
	thermal power stations
PT	fossil fuels
	fuel
CC	A8610B Fossil fuels
	B8210 Energy resources
	E3020 Mining, oil drilling and natural gas industries
	E3624 Fuel processing industry
DI	January 2023

network function virtualisation

BT	computer networks
	virtual machines
	virtualisation
RT	cloud computing
	computer network management
	resource allocation
	software defined networking
	telecommunication network routing
PT	computer networks
	virtual machines
	virtualisation
CC	B6210L Computer communications
	C0310D Computer installation management
	C5620 Computer networks and techniques
	C6190 Distributed systems software
	C7430 Computer engineering
DI	January 2023

ocean dynamics

BT	oceanography
RT	ocean circulation
	ocean temperature
	ocean waves
PT	oceanography
CC	A9210D Dynamics of the deep ocean
	A9210F Dynamics of the upper ocean
DI	January 2023

optical antennas

BT	antennas
	optics
	optics
NT	nanoantennas
RT	metamaterial antennas
	optical communication equipment
	optical metamaterials
	optical metasurfaces
	optoelectronic devices
	plasmonics
	receivers
	terahertz materials
	transceivers
	transmitters
PT	antennas
	nanophotonics
CC	A4280S Optical communication devices, equipment and systems
	B5270 Antennas
	B6260C Optical communication equipment
DI	January 2023

optical fibre attenuation

UF	optical fiber attenuation
BT	optical fibres
RT	light attenuation
	optical fibre losses
PT	optical fibre losses
CC	A4281D Optical propagation, dispersion and attenuation in fibres
	B4125 Fibre optics
DI	January 2023

optical metasurfaces

UF	optical metasurface
BT	optical metamaterials
RT	nanophotonics
	surface structure
PT	optical metamaterials
CC	A4270T Optical metamaterials
	A4284 Nanophotonic devices and technology
	B4110 Optical materials
	B4146 Nanophotonic devices and technology
DI	January 2023

pesticides   *[promoted lead-in]*

BT	agrochemicals
RT	agricultural pollution
	agriculture
	chemical industry
	chemical products
	food safety
	land pollution
	pest control
	plant diseases
	soil pollution
	water pollution
PT	agrochemicals
	pest control
CC	E0230 Environmental issues
	E1780 Products and commodities
	E3010 Agriculture
	E3626 Chemical industry
DI	January 2023

phonon density of states

UF	vibrational density of states
BT	phonons
RT	phononic crystals
PT	phonons
CC	A6320D Phonon states and bands, normal modes, and phonon dispersion
	A6322 Phonons in low-dimensional structures and small particles
	A7430K Phonons in superconductors
DI	January 2023

plantations

UF	orchards
BT	farming
RT	crops
	forestry
	horticulture
	land use
	remote sensing
	vegetation mapping
PT	crops
	forestry
	horticulture
CC	A8620U Agriculture (energy utilisation)
	B7730 Other topics in Earth sciences
	C7860 Agriculture, forestry and fisheries computing
	E3010 Agriculture
DI	January 2023

security of hardware

BT	security
RT	computer crime
	computer network security
	cryptography
	DP management
	field programmable gate arrays
	industrial property
	integrated circuit design
	microprocessor chips
	security of data
CC	B0140 Administration and management
	B1265 Digital electronics
	C5480 Security aspects of hardware
DI	January 2023

self-healing materials

BT	materials
RT	bio-inspired materials
	deformation
	fracture
	intelligent materials
	polymers
	shape memory effects
	stress effects
	wear
CC	A8100 Materials science
DI	January 2023

semidefinite programming   *[promoted lead-in]*

BT	convex programming
RT	array signal processing
	computational complexity
	matrix algebra
PT	mathematical programming
CC	B0260 Optimisation techniques
	C1180 Optimisation techniques
	E0210G Optimisation
DI	January 2023

shear testing

BT	mechanical testing
RT	failure (mechanical)
	shear strength
PT	mechanical testing
CC	A8172J Destructive testing: other methods
	E1630 Testing
DI	January 2023

soft actuators

BT	actuators
RT	artificial intelligence
	automata theory
	biocybernetics
	compliance control
	electroactive polymer actuators
	electromechanical actuators
	intelligent actuators
	mechatronics
	microactuators
	networked control systems
	piezoelectric actuators
	pneumatic actuators
	pneumatic drives
	polymers
	sensors
	servomechanisms
	soft robotics
	transducers
	visual servoing
PT	actuators
CC	B8380 Control gear and apparatus
	C3260 Actuating and final control devices
	E1550 Control technology and theory (production)
	E1780 Products and commodities
DI	January 2023

soft robotics
UF	soft robots
BT	robots
RT	assistive robots
	biomimetics
	compliant mechanisms
	elastomers
	flexible manipulators
	grippers
	medical robotics
	mobile robots
	soft actuators
	surgical robots
	wearable robots
PT	robots
CC	C3390 Robotics
	E2230 Robot and manipulator mechanics
DI	January 2023

solar panels (photovoltaic)
BT	photovoltaic power systems
NT	building integrated photovoltaics
RT	building services
	buildings (structures)
	renewable energy sources
	solar cell arrays
	solar power
PT	photovoltaic power systems
	solar cell arrays
CC	A8620Q Buildings (energy utilisation)
	A8630J Photoelectric conversion; solar cells and arrays
	B8250 Solar power stations and photovoltaic power systems
	B8420 Solar cells and arrays
DI	January 2023

stormwater
BT	civil engineering
	hydrology
RT	disasters
	emergency management
	floods
	geotechnical engineering
	geotechnical structures
	groundwater
	rain
	rivers
	storms
PT	hydrology
	rain
CC	A9240 Hydrology and glaciology
	E2110D Geotechnical structures
	E3030 Construction industry
DI	January 2023

tensile modulus
BT	elastic moduli
RT	elastic deformation
	rigidity
PT	elastic moduli
CC	A6220D Elasticity, elastic constants
	A8140J Elasticity and anelasticity
	E2180A Elasticity (mechanical engineering)
DI	January 2023

thermomechanical effects
BT	mechanical properties
NT	thermoelasticity
RT	heat treatment
	shape memory effects
PT	mechanical properties
CC	a6220 Mechanical properties of solids (related to microscopic structure)
	A8140 Mechanical properties and materials treatment
	E2180 Specific mechanical properties (mechanical engineering)
DI	January 2023

top management
BT	management
RT	decision making
	management science
	organisational aspects
PT	management
CC	E0120B General management
DI	January 2023

transition metal dichalcogenides
BT	semiconductor materials
	transition metal compounds
RT	semiconductor thin films
PT	transition metal compounds
CC	A7315H Electronic structure of other inorganic semiconductors and insulators (thin films, low dimensional and nanoscale structures)
	A7360P Electrical properties of other inorganic semiconductors (thin films, low-dimensional and nanoscale structures)
	A7865P Optical properties of other inorganic semiconductors and insulators (thin films, low-dimensional and nanoscale structures)
	B2520M Other semiconductor materials
DI	January 2023

watersheds

RT	groundwater
	hydrology
	rivers
	water resources
PT	hydrology
CC	A9240 Hydrology and glaciology
DI	January 2023