

## Keyword Index

### A

Acanthaceae 288-290  
*Acaulospora tuberculata* 634, 638  
 acetylcholinesterase 246, 611, 615, 618  
 acute respiratory distress syndrome 472, 479  
 adsorption mechanism 193, 453, 579, 585  
 advanced gastric cancer 462, 471  
 aflatoxin B<sub>1</sub> 308, 313, 602, 610  
 African catfish 611-617  
*Agrobacterium* 412-417, 419, 624  
 agronomic traits 157, 159-163, 165-167, 412, 542  
 alternative equation 368  
 amino acid composition 521, 548, 551, 553  
 amylose content 12, 159, 164, 539, 542, 546  
 anti-biofilm activity 514, 518  
 anaerobic co-digestion 119-121, 126, 314, 510, 515  
 anti-inflammatory 36, 151, 154, 206, 286, 421  
 505, 515, 650, 669, 679, 713, 722  
 anti-M. gallinae 650, 654  
 antimicrobial activity 288, 292, 328, 461, 515, 519  
 antioxidant 57, 151, 270, 323, 420, 443, 518, 548  
 593, 617, 644, 650, 669, 676, 684, 713, 721  
 aquatic toxicology 611  
 arbutin 420-428  
 arson 59, 60, 63  
 artificial cultivation 323, 548, 551, 555  
*Artocarpus lacucha* 420  
*Artocarpus thailandicus* 420  
*Aspergillus flavus* 308, 602  
*Aurantiochytrium limacinum* 403

### B

*Bacillus subtilis* 18, 195, 204, 289, 505, 511  
 bacterial diversity 128, 130  
 beach 87, 196, 336-343, 724, 732  
 beer 323-328, 659, 662  
 berseem 6, 7, 9  
*Betta* spp. 382, 390, 391  
 Bhutan Himalayas 429-433  
 BiFeO<sub>3</sub> films 330, 334  
 bifunctional microcrystals 178, 184, 185  
 biodegradation 83, 195-200, 203, 308  
 biodegraded products 308-311, 313, 608  
 biogas 119-127

biomarkers 142, 249, 314, 464, 469, 503, 507, 616  
 bioreporter 344-352  
 biosensors 245-251, 253, 593, 698, 704  
 biosorbent 37, 43, 186, 189-194  
 biosorption 37-40, 42-45, 189, 193  
 biosurfactant 11-18, 195-205  
 blastospores 557-567  
 breeding lines 10, 19, 22-27, 547  
*Brevibacillus* sp. 634-638  
 broth microdilution 514, 650, 665, 666  
 bubble-nest builder 382  
*Burkholderia pseudomallei* 503, 505, 511

### C

cadmium 37, 280, 287, 450, 456, 596, 611  
 618, 709  
 calc-silicate 481-486, 488  
 camboginol 671, 674, 676, 678  
 cancer 3, 138, 170, 195, 204, 249, 261, 293, 308  
 344, 392, 428, 461, 512, 568, 625, 639, 686, 697  
 cancer therapy 396, 639, 643, 646, 648, 686  
 capsaicin detection 586, 591  
 carbon steel 59-64  
 carboxymethyl chitosan 30-36, 461  
 carcinoembryonic antigen 462, 464, 466  
 cell-free DNA 462, 471  
 cerebral hypoperfusion 713-716, 718, 720-723  
 Chao Phraya river mouth 724-728  
 chemoresistance 639-649  
 Chinese water chestnut 151, 155  
 chitosan nanoparticles 36, 457-461  
 chlorophyll fluorescence 436, 442  
 chloroplast genome 520, 524, 528  
 chromosome 28, 167, 269, 297-307, 345, 398, 413  
 539, 547, 578  
 chronic immune microinflammation 206  
*Cladosporium uredinicola* 308, 314, 608, 610  
 clove essential oil 650-655  
 coffee 10, 52-58, 186, 192, 194  
 conjugacy class length 235, 239  
 continuous method model 734, 735, 737  
 cooking quality 157, 162, 165, 167, 545, 547  
 cool island 213, 215, 217, 221, 222  
 coral-associated bacteria 128, 131, 132

- Cordyceps militaris* 323, 324, 328, 567  
 coupled model 93, 98, 99  
 creepers 436, 442  
 cryopreservation 321, 352, 411, 557, 563, 566  
 crystal violet 186, 193, 194  
 cyclodextrin 254, 256-262  
 cyclodextrin derivatives 254, 258, 260  
 cyclotide family 280, 282, 284, 286  
 CYP2C19, CYP3A4 397-402
- D**  
*Daboia siamensis* venom 392, 396  
 degumming 65, 66, 70, 71  
 DHA 403, 407, 409, 411, 610  
 dielectric barrier discharge 444, 449  
 differential expression 133, 146, 263, 280  
 Diophantine 490, 493  
 diuretic effect 671, 674, 677  
 DNA-based biosensors 245, 248  
 dormancy 271-274, 276, 320, 619, 623, 625  
 drug carrier 254
- E**  
 early diabetic nephropathy 206  
 eco-friendly silver nanoparticles 697  
 ecological model 93, 94, 99  
*Eichhornia crassipes* 450, 455, 456  
 electrocatalyst 586, 594  
 electrochemical 72, 245-253, 586-594, 691  
 704, 712  
 electrochemical sensor 251, 586, 590, 592  
 594, 712  
 electrolyte 52, 587, 590, 673, 677, 692  
 706-709, 711  
 electroreduction 694, 706-712  
 electrospinning 595-600  
 elicitor 679, 680, 684  
 enamine 579-584  
 endophytic actinobacteria 288, 290, 292-295  
 enterococci 665-670  
 entomopathogenic fungi 557, 559, 561,  
 564-567  
 enzymatic biosensors 245, 246  
 epidermal cell structure 657, 660, 663  
*Escherichia coli* 289, 344, 351, 480, 512, 519  
 532, 670, 689, 704  
 essential oils 428, 514, 518, 655  
 Etest 665-668
- ethanol 13, 31, 126, 160, 179, 197, 289, 298, 313  
 324, 345, 414, 437, 475, 580, 594, 613, 651, 698  
 explicit formulas 109, 112, 115-118  
 exponential stability 734, 735, 737  
 expressed sequence tags 6, 7, 10  
 extracellular enzyme 403, 407, 411
- F**  
 fatty acid methyl 404, 602, 607  
 esters feedback control 494, 496, 500, 502  
 fetal skin 133, 134, 140  
 Fibonacci 490  
 fibrosis 30, 35, 133, 141, 464, 472, 478-480  
 fighting fish 382, 386, 390  
 finite group 235, 236  
 fish molecular taxonomy 382  
 flotation 579-585  
 flow-based titration 52, 54, 57  
 flower bud differentiation 271, 274, 276-279  
 flower development 271, 274, 277, 320  
 fluorescence nanofiber network 595  
 fluorescent in situ hybridization 297  
 fragrance gene 539  
 FTIR 187, 193, 336, 342, 445, 449, 458, 596, 697  
*Fusarium* sp. 37, 39-43, 288, 290, 294
- G**  
*Ganoderma gibbosum* 548, 551, 555  
*Garcinia dulcis* 671, 674-676, 678  
 gas exchange 436-438  
 gas chromatography-mass spectrometry (GC-MS)  
 80, 323, 586, 651  
 gasoline 59, 64, 84, 195-200, 203  
 general variational inequality 734, 737  
 genetic analysis 6, 530, 546  
 genetic susceptibility 568, 577  
 genotoxicity 344-352, 420, 425, 427
- geographic distribution 429  
 geothermobarometry 481  
 ghost fishing 87, 90-92  
 Gneiss 481-489  
 green synthesis of nanoparticles 697  
 groundnut oils 602-609

group oder	235	<b>M</b>	
Guan River Estuary	80-83, 85	magnetic biochar	450, 456
gusA	412-418	magnetic field strength	619, 621, 624
<b>H</b>		magnetic materials	622, 691
Hardy inequality	746, 751, 752	magnetic properties	178, 184, 330, 333
health-risk assessment	80		692, 696
heavy doping	178, 182, 184	MAPK pathway	392, 393
heavy metal detection	697, 704	MAS	19-23, 25, 547
heavy metals	37-45, 79, 455, 612	medicinal fungus	548
	697, 701, 731, 733	melanoma	391-396, 469, 471, 643, 648
Hermiar's model	65	meromorphic solutions	626, 633
Hermite-Hadamard-Fejér inequality	102, 108	microplastics	336-343, 724-726, 728-733
heteroscedasticity	353, 354, 360	microsatellite	6, 7, 521, 528, 541, 547
high-temperature stress	436-438, 442	mir-203a	133-141
hippocampus	713, 716, 718-721, 723	Mn doping	330, 334
histopathology	390, 61, 617	modified electrode	586, 591
human embryonic lung fibroblasts	472, 473	molecular cytogenetics	297, 298
hybrid materials	595, 712	monitoring process	52, 109
hydrodynamic model	93, 96, 99, 101	morelloflavone	671, 674, 676
hydrothermal method	46, 178, 184, 330	Moringa oleifera pod husk	186, 193
hypotensive effect	671, 674-678	<i>Morus alba</i>	679, 681, 684
<i>Hyriopsis cumingii</i>	263, 269, 270	mouse L929 fibroblasts	30, 35
<b>I</b>		mouthbrooder	382, 387
immuno-based biosensors	245, 246, 251	MTT	31, 35, 420, 425, 472, 475, 665, 670, 687
ionotropic gelation method	457, 460	mudflat	336-340
iron	38, 44, 60, 86, 202, 272, 450, 461, 508, 554	mulberroside A	679-685
	584, 690-697, 704	mycoremediation	37
iterative equation	240, 244	<b>N</b>	
ITS identification	548	nacre color	263, 269
<b>J</b>		NACT	462-467, 469
japonica rice	157, 161, 164-168	Nanomedicine	639, 645, 649, 690, 705
Jensen's functional equation	368, 373	narrow size distribution	457, 459, 596
Jordan derivations	738, 745	normality	39, 208, 220, 227, 234, 353, 355
<b>L</b>		norm inequalities	753, 755
lead electrode	706-710	northern Thailand	158, 167, 297, 306, 316, 489
lead ions	706, 712		568, 575, 617
Leslie system	494, 502	<b>O</b>	
lipopeptide	18, 195, 198, 200-205	oil	6, 37, 65, 79, 156, 186, 196, 204, 327, 337
Lucas	149, 490		409, 456, 515, 530, 540, 569, 602, 650, 672, 696
lung cancer	138, 141, 471, 568-578, 642, 647	ointment and cream formulations	650-652
		operator inequality	224
		optical microscope	657, 660

- optical properties 330, 335, 594, 598, 663  
 Orchidaceae 315, 321, 657, 662  
*Oryza sativa* 157, 293, 412, 531, 538, 546, 554  
 oxidation 1, 59, 72, 144, 155, 172, 254, 278, 328  
 352, 402, 421, 554, 589, 653, 726  
 oyster 93 98, 263, 267, 270
- P**
- peritoneal macrophages 151  
 perovskite solar cell 46  
 pesticide 79, 344, 350, 618  
 petal texture 657, 659, 661  
 petrographical characteristics 481  
*Phalaenopsis* 657-664  
 phenolic acids 151, 685  
 phenology 271, 274  
 phospholipase A<sub>2</sub> 392, 396  
 phytogeography 429, 430  
 phytopathogenic fungi 288, 293  
 pigment content 436, 438, 442, 619, 662  
 polar decomposition 753, 754  
 polycyclic aromatic hydrocarbons (PAHs) 80, 85  
 polyimide 71, 444-449  
 polymer based carbon nanotubes composite 169  
 polymorphisms 212, 287, 397, 401, 569, 577  
 polyphenol oxidase 420, 423, 427, 609  
 polyploidy 297, 301, 305, 307  
 polyunsaturated fatty acids 403, 409  
 polyvinyl chloride 169, 171, 587, 595  
 pork 72, 75, 78, 593  
 positive linear operators 224  
 potato 126, 309, 549, 558, 619, 623  
 precursor 284, 331, 679, 682  
 projective linear group 235, 238  
 prostate cancer cell line 686, 689  
 protein nutritional value 548, 554  
 proteomics 4, 142, 145, 148, 150  
 protocorm 315-320, 322  
 protolith 481, 484  
 pulmonary fibrosis 472, 478, 480  
 pure-line selection 157, 161, 166  
 pyrimidinyl-thiobenzoate 530
- Q**
- q-difference equations 626
- quantum wire 691-695  
 quartz 325, 481, 486, 579-585
- R**
- radish 520-523, 525, 528, 537  
 Rayong Province 87, 120, 451  
*Rhododendron* 156, 429-435  
 ribosomal genes 132, 297, 302, 387, 508, 513, 522  
 16S rRNA gene sequencing 128, 132, 197  
 rice flour 11, 13, 16  
 Riemann-Liouville fractional integral 102  
 RNA interference 472, 476, 480  
 rock metamorphism 481
- S**
- Sahatsatara formula 713, 722  
 salinity 11, 89, 93, 97, 120, 196, 200, 725  
 scanning electron microscopy 47, 59, 171, 186  
 330, 445, 586, 596, 657, 697, 700  
 sediment 40, 86, 119, 126, 205, 288, 336, 409  
 450, 611, 732  
 seed germination 44, 315, 320, 416, 623, 637, 705  
 semiconductor nanoplatelets 595, 600  
 shared set 227  
 sharing value 361  
 Sharp constant 746  
 shoot induction 315, 317, 320  
 shrimp pond sediment 119, 126  
 simple sequence repeats (SSRs) 6, 9, 280  
 520, 527  
 simulation 93, 101, 110, 255, 262, 353  
 360, 585, 732  
 single cell RNA sequencing 503, 510  
 size-controlled particles 457  
 smartphone 52-55, 57  
 SNPs 147, 160, 280, 284, 397, 401, 540, 568-576  
 sodium dodecyl sulfate 197, 250, 253, 450  
 soil remediation 450, 451  
 solar-thermal conversion 169, 174-176  
 sol-gel method 330, 334, 343  
 solubility enhancement 254, 257, 260  
 sonication-assisted transformation 412  
 sophorolipid 11, 15-18  
 soybean oil 11-14, 16, 66, 68, 71  
 SPC-RGO electrode 72  
 Species distribution 382, 435  
 sphere 728, 746, 750

spore propagation 634-637  
 squid trap 87, 90  
*Staphylococcus pseudintermedius* 514, 518  
 statistical process control 109, 117  
 striatum 142, 145, 148, 409, 411  
 sulfonyleurea 530, 537, 538  
 surface modification 444, 448, 697  
 surfactants 11, 16, 18, 451, 706-712  
 symmetric distribution 353

**T**

tapioca starch sludge 119  
 target-site mutation 530  
 thermodynamics 187, 191, 194, 254, 257, 260  
 tidal cycles 724, 728  
 time-kill assay 650, 654  
 time-of-flight mass spectrometry 142, 144, 308  
 314  
 titratable acidity 52, 54, 57  
 TLR-4 206-211  
 TNC 133-137, 139  
 tomato 19-29, 328, 623, 685  
 toxicity 11, 37, 43, 84, 122, 153, 280, 308, 349  
 398, 420, 450, 461, 595, 608, 616, 672, 687, 698  
 transcriptome 263, 267, 279, 284, 287, 503, 510  
 triangular rings 738, 739  
 triazolopyrimidine 530  
*Trifolium species* 6, 8, 10  
 tumor microenvironment 575, 639, 645, 647, 649  
 two-dimensional gel electrophoresis 142, 145  
 tyrosinase 263, 267, 420, 425, 427, 685, 704

**U**

ultrafiltration 65, 70  
 uniform asymptotical stability 494, 498, 500  
 up-conversion luminescence 178-185  
 urban climate 213, 223  
 urbanization 213, 217, 222, 470  
 UV irradiation 602, 607-610, 684

**V**

vancomycin resistance 665, 667-670  
*Vanilla siamensis* 315, 321  
 variable coefficients 240, 244  
 variances function 353

*Viola yedoensis* Makino 280, 286  
 volatile flavor compounds 323, 327  
 voltammetry 72, 79, 250, 586, 591, 696, 712  
 voriconazole 397, 398, 401

**W**

wastewater 18, 37, 67, 119, 126, 186, 193, 410  
 419, 450, 456, 730  
 waxy gene 539, 541, 546  
 white matter injury 713, 718, 722  
 wound healing 133-137, 139, 267, 461, 554, 640

**Y**

Yb/Er ratio 46, 50  
 Young's inequality 224, 755

**Z**

zinc phthalocyanine 686, 690