

Keyword Index

- Absorbable144, 329, 363, 571, 664, 697, 705, 752, 76, 767, 838, 846, 849, 892
- adhesion112, 149, 2, 222, 310, 410, 426, 443, 462, 518, 578, 595, 605, 606, 712, 782, 796, 831, 852, 906, 912
- adsorption.....23, 232, 306, 427, 691, 86, 877
- aluminum oxide (alumina).....759
- angiogenesis/neovascularization.....208, 211, 263, 264, 266, 267, 269, 305, 433, 489, 5, 518, 536, 548, 549, 553, 554, 556, 558, 559, 636, 66, 68
- animal model.....151, 203, 349, 364, 365, 366, 378, 436, 50, 647, 700, 716, 73, 893
- antimicrobial223, 37, 624, 638, 639, 643, 673, 736, 739, 750, 760, 779, 820, 886, 916, 918
- arthroplasty ...40, 43, 46, 740, 771, 801
- articular cartilage ...230, 245, 283, 324, 502, 525, 794
- artificial heart.....909
- artificial heart.....647, 830
- artificial lung616
- artificial skin.....484
- atomic force microscop...140, 232, 578, 818, 889
- bacterial adherence.....258, 31, 34, 36, 414, 616, 640, 832, 88, 888, 891, 917
- bearing surfaces261, 43, 46, 740
- bioactive glass487, 726, 728, 730, 756, 762, 891, 913
- bioactive material.....119, 124, 129, 130, 14, 153, 169, 264, 299, 302, 352, 472, 480, 510, 530, 535, 55, 585, 615, 647, 704, 729, 731, 737, 761, 773, 786, 81, 82, 832, 847, 866
- biocompatibility/hard tissue...119, 164, 365, 490, 513, 559, 721, 725, 733, 752, 766, 887
- biocompatibility/soft tissue....149, 172, 26, 329, 33, 357, 432, 497, 564, 598, 614, 659, 67, 778, 793, 838, 843, 856, 884, 902, 906, 911, 92
- biodegradation.....121, 179, 192, 211, 248, 259, 292, 331, 334, 335, 336, 338, 339, 340, 357, 367, 382, 459, 503, 563, 567, 577, 600, 689, 697, 708, 755, 809, 82, 828, 829, 834, 837, 838, 840, 843, 859, 864, 876, 878
- biological fluids.....665, 806
- biomaterials availability.168, 205, 496, 504, 635, 780, 878
- biomechanics.....1, 139, 141, 143, 417, 458, 473, 538, 566, 665, 74, 794, 800, 804, 869, 911
- biomimetic101, 12, 125, 127, 131, 155, 168, 191, 196, 204, 209, 210, 213, 239, 241, 242, 267, 278, 281, 305, 311, 318, 321, 323, 353, 400, 409, 419, 452, 459, 464, 465, 467, 470, 472, 476, 482, 484, 486, 535, 538, 549, 574, 578, 591, 593, 630, 635, 648, 663, 671, 678, 738, 753, 755, 77, 774, 775, 856, 858, 862, 889, 918, 931, 98
- biomolecular engineering.....274, 531, 704, 713, 729, 912, 98
- bioresorbable...293, 313, 368, 517, 734, 765, 796, 844, 851, 874, 898
- biosensors/biochips 116, 270, 271, 274, 275, 276, 277, 33, 786, 822, 824
- block copolymer.....117, 150, 222, 23, 291, 332, 572, 573, 676, 709, 848, 92
- blood-material interaction.....133, 562, 631, 817, 825
- blood-material interface....231, 33, 827
- bone.....154, 209, 243, 28, 285, 413, 418, 436, 469, 478, 492, 519, 639, 649, 735, 738, 750, 753, 760, 781, 783, 80, 800, 81, 839, 84, 896
- bone cement (= PMMA, acrylic)...123, 456, 646, 733, 743, 797, 861, 884
- bone graft .109, 164, 244, 285, 294, 44, 464, 690, 722, 726, 727, 734, 77, 772
- bone ingrowth .414, 44, 473, 610, 693, 729, 754, 757, 78, 898, 913
- bone remodeling.....109, 132, 362, 466, 758
- burn223, 71
- calcification205, 898
- calcium phosphate(s)128, 152, 154, 162, 163, 166, 212, 22, 292, 297, 322, 395, 476, 510, 538, 723, 727, 730, 732, 734, 736, 737, 738, 748, 749, 758, 772, 781, 812, 835, 897
- calcium salts/compounds 686, 731, 765
- carbon.....26, 605, 606, 907
- carcinogenesis50, 699, 771
- cardiovascular118, 189, 204, 217, 228, 265, 337, 340, 374, 450, 471, 560, 561, 568, 581, 611, 645, 678, 76, 826, 853, 867, 885, 910, 96
- cartilage...212, 336, 384, 390, 399, 460, 486, 493, 508, 514, 521, 524, 566, 596, 657, 841, 903
- catheter72, 890
- cell adhesion...120, 161, 199, 210, 219, 246, 306, 328, 402, 407, 420, 451, 459, 490, 519, 520, 575, 584, 658, 816, 823, 870, 883, 888, 904, 923
- cell culture157, 158, 159, 161, 172, 20, 220, 28, 301, 307, 341, 387, 396, 403, 406, 439, 496, 607, 617, 650, 710, 752, 836, 904, 932
- cell differentiation.....188, 189, 190, 197, 209, 235, 240, 254, 318, 323, 373, 375, 379, 380, 385, 390, 394, 395, 397, 402, 406, 437, 439, 441, 473, 486, 5, 537, 650, 728, 903, 905, 99
- cell therapy.....107, 190, 300, 302, 303, 435, 437, 489, 706, 708, 820, 84
- cell-cell interactions142, 214, 278, 298, 304, 381, 410, 452, 570
- cell-material interactions.....120, 129, 14, 142, 161, 176, 182, 186, 187, 19, 195, 198, 199, 215, 216, 221, 222, 233, 235, 239, 240, 242, 25, 251, 3, 307, 319, 321, 324, 325, 348, 355, 371, 372, 373, 378, 379, 388, 389, 394, 397, 398, 401, 402, 407, 408, 411, 412, 413, 415, 419, 420, 421, 422, 424, 425, 428, 429, 430, 438, 442, 445, 448, 451, 466, 467, 468, 48, 49, 501, 502, 514, 520, 522, 529, 537, 542, 543, 544, 545, 546, 547, 568, 579, 585, 586, 587, 590, 592, 595, 596, 61, 613, 65, 656, 661, 670, 672, 764, 773, 778, 795, 813, 816, 832, 866, 870, 871, 874, 887, 892, 900, 922, 97
- ceramic...163, 293, 294, 296, 693, 722, 723, 727, 735, 737, 751, 84
- clinical.....73, 920, 925
- coagulation126, 827
- coagulation factors612
- coating(s)111, 125, 127, 128, 136, 180, 295, 38, 450, 572, 585, 608, 648, 652, 777, 781, 793, 826, 835, 847, 886
- cobalt-chromium (alloys).....429, 805
- collagen10, 112, 119, 301, 356, 363, 376, 393, 412, 481, 493, 499, 505, 508, 589, 657, 662, 668, 756, 762, 782, 809
- complement.....233
- composite/hard tissue....154, 466, 480, 733, 764
- composite/soft tissue.....224, 332, 475, 483, 485, 495
- computer modeling/simulation224, 553, 645, 931
- contact lens.....125, 311, 91
- controlled release105, 111, 113, 156, 180, 194, 226, 230, 316, 338, 457, 56, 573, 58, 581, 60, 608, 62, 642, 649, 674, 680, 690, 695, 705, 71, 711, 716, 720, 839, 853, 867, 868, 87, 873, 879, 894, 901
- corrosion ..21, 255, 256, 257, 259, 260, 262, 563, 787, 789
- crystallinity865
- cytokines60
- cytotoxicity391, 52, 607, 721, 739, 785, 820, 851
- degradation.....139, 261, 27, 334, 341, 370, 515, 522, 56, 599, 732, 868, 912
- demineralized.....757
- dental/craniofacial material....1, 2, 400, 666, 722, 776, 777, 778, 779
- dermal wound dressing...557, 662, 695
- diabetes ..153, 214, 220, 264, 634, 635, 636, 637
- drug delivery/release101, 102, 107, 109, 110, 111, 113, 114, 115, 116, 121, 123, 136, 145, 155, 16, 163, 165, 168, 179, 183, 184, 194, 224, 225, 227, 228, 248, 268, 289, 290, 291, 294, 296, 297, 30, 311, 312, 313, 314, 317, 326, 328, 331, 334, 351, 375, 39, 400, 428, 446, 447, 453, 455, 457, 47, 528, 56, 57, 573, 576, 59, 599, 604, 617, 619, 62, 620, 621, 623, 624, 626, 627, 628, 629, 630, 633, 634, 641, 642, 643, 644, 645, 648, 649, 650, 651, 653, 654, 655, 669, 674, 675, 682, 683, 685, 686, 687, 688, 689, 691, 692, 693, 694, 698, 700, 701, 702, 703, 704, 705, 708, 709, 710, 711, 712, 713, 714, 715, 717, 719, 723, 725, 736, 762, 767, 797, 827, 85, 855, 857, 861, 867, 873, 874, 880, 884, 901, 91, 915, 916, 924, 928, 929, 93
- electrical stimulation..16, 19, 273, 354, 429, 454, 783, 784
- electrodes114, 273, 784
- electron microscopy32
- embolization.....312, 327, 885
- encapsulated cells...117, 171, 201, 434, 548, 637, 899
- endothelial cells120, 134, 216, 409, 410, 462, 482, 520, 549, 551, 552, 570
- endothelialization.....199, 562
- enzyme(s).....148, 178, 399, 576
- epithelial cells12, 468
- extracellular matrix100, 12, 159, 198, 218, 246, 250, 251, 253, 280, 282, 284, 320, 350, 353, 359, 360, 417, 438, 460, 481, 502, 589, 63, 69, 9, 905, 910, 94, 96
- eye.....416, 814
- fatigue41
- fiber.....190, 507, 528, 608, 613, 670, 673, 795, 854, 883
- fibrin.....254, 263, 284, 551, 558
- fibrinogen.....236, 594
- fibroblasts.....3
- fibronectin/vitronectin....246, 565, 588
- fibrous capsule55, 68
- finite element analysis.....458, 800
- fixation610
- foreign body reactions (response)..175, 215, 234, 273, 276, 350, 432, 442, 445, 554, 64, 659, 68
- fracture378, 83
- fracture fixation.....458, 640, 744
- fracture toughness731
- fretting.....255, 257
- FTIR2, 882
- gene therapy/gene delivery193, 225, 226, 288, 30, 306, 455, 526, 623, 632, 661, 677, 681, 695, 702, 711, 724, 83, 872
- gold602, 603
- graft/copolymer.....347, 348
- growth factor..130, 156, 208, 228, 229, 230, 265, 316, 322, 347, 364, 494, 525, 550, 556, 559, 587, 590, 621, 652, 654, 669, 676, 682, 683, 690, 696, 720, 96
- heart assist device366
- heart valve.....205, 206, 453, 561, 99
- hemocompatibility603
- hemodialysis16
- hemostasis.....299, 313, 368, 609, 612, 675, 854
- heparin.....156, 197, 229, 245, 381, 494
- hip prosthesis260, 42, 45, 742, 787, 789
- histomorphometry362
- hydrogel117, 122, 124, 137, 148, 155, 160, 169, 170, 171, 176, 180, 186, 187, 194, 201, 211, 213, 214, 218, 220, 225, 226, 229, 245, 249, 252, 265, 267, 27, 270, 277, 304, 307, 328, 336, 339, 341, 343, 346, 356, 372, 381, 405, 408, 422, 434, 441, 442, 445, 454, 465, 468, 470, 48, 488, 500, 503, 511, 52, 525, 529, 532, 533, 54, 548, 550, 552, 554, 569, 57, 579, 58, 588, 592, 593, 594, 636, 653, 664, 669, 671, 673, 680, 682, 684, 692, 774, 792, 802, 81, 841, 852, 856, 86, 860, 863, 868, 879, 881, 882, 883, 900
- hydrophilic342
- hydrophobic430, 642, 680, 776, 857
- hydroxy apatite...1, 165, 292, 295, 316, 388, 425, 464, 469, 49, 506, 644, 646, 664, 724, 732, 735, 753, 754, 761, 764, 774, 775, 790, 829, 834, 862, 922
- immobilization103, 587, 588
- immune response ...101, 102, 103, 105, 106, 107, 108, 181, 184, 216, 300, 448, 626, 67, 769
- immunoassay(s).....446, 822
- immunohistochemistry.....177
- implant design...149, 290, 333, 4, 539, 637, 754, 873, 911, 921
- implant interface ..256, 4, 413, 639, 64,

784
implant retrieval44
in vitro160, 277, 310, 358, 367, 422, 446, 465, 498, 539, 555, 586, 720, 833, 925
in vivo103, 108, 175, 297, 303, 335, 347, 363, 51, 629, 66, 67, 694, 80, 844, 908, 93
infection147, 24, 32, 576, 640, 643, 646, 675, 686, 72, 886, 917, 918
inflammation104, 175, 301, 426, 55, 65, 651, 657, 71
integrins219, 221, 234, 407, 415
interface(s)177, 212, 519, 6, 782, 815, 824
intervertebral disk139, 491, 663, 804, 858
intraocular lens22, 342, 343, 88, 90
intravascular825
joint replacement444, 747
knee prosthesis146, 746
laser51, 582, 701
lens344
leukocyte443, 65
ligament(s)567
lipid447, 632, 653, 877, 91
matrix53, 926
mechanical properties138, 140, 141, 142, 144, 145, 17, 281, 319, 330, 339, 348, 370, 389, 408, 411, 418, 424, 505, 511, 522, 542, 543, 575, 577, 660, 667, 699, 763, 795, 796, 797, 798, 8, 802, 805, 807, 808, 809, 810, 845, 849, 851, 860, 864, 869
membrane666
metal (alloys) .132, 340, 563, 641, 744, 788, 821
metal ions .21, 564, 638, 790, 833, 916
microscopy140, 173, 176, 926
microspheres .104, 148, 201, 298, 308, 312, 384, 405, 434, 435, 452, 456, 506, 515, 604, 626, 627, 655, 689, 717, 880, 923, 924
microstructure 412, 419, 491, 500, 532, 541, 542, 543, 547, 629, 759, 767, 864
mineralization469, 756, 78, 862
molecular imaging ..64, 768, 924, 925, 927, 928, 929, 930
molecular modeling427
morphology377, 417, 423, 451
muscle217, 279, 338, 454, 677, 94
nanoassembled devices ...531, 929, 930
nanobiology619, 620, 658
nanomaterials/nanophase .106, 11, 147, 164, 179, 181, 182, 192, 243, 28, 289, 29, 308, 317, 337, 37, 392, 449, 478, 528, 583, 597, 598, 600, 602, 614, 622, 624, 628, 634, 666, 679, 698, 700, 707, 716, 721, 724, 725, 763, 776, 785, 790, 855, 897, 930
nanomedicine ...105, 108, 183, 24, 287, 288, 289, 291, 299, 314, 326, 447, 47, 540, 607, 609, 619, 621, 623, 632, 633, 651, 676, 709, 715, 718, 927
nanomodified surfaces ...106, 134, 135, 25, 275, 420, 506, 540, 584, 589, 610, 679, 718, 835
nanotechnology 178, 184, 244, 26, 270, 332, 337, 362, 391, 448, 455, 47, 472, 500, 513, 52, 534, 605, 606, 611, 612, 613, 615, 616, 62, 630, 633, 672, 674, 701, 702, 706, 713, 719, 822, 908
nerve regeneration .248, 252, 253, 254, 345, 349, 352, 353, 354, 355, 356, 358, 359, 360, 382, 509, 681, 73
neural prosthesis345, 350, 357, 432
neurons19, 221, 250, 252, 354, 785
ocular88
ophthalmic343, 85, 86, 87, 89, 90
orthopedic 123, 131, 143, 166, 183, 24, 259, 418, 42, 479, 516, 524, 638, 644, 654, 74, 742, 745, 750, 760, 770, 834, 841, 842, 850, 861, 907
osteogenesis ...158, 195, 235, 461, 510, 687, 688, 728, 766, 82, 83, 899
osteolysis444
osteoporosis897
oxidation ...423, 488, 58, 837, 840, 878
pacemaker919
particulate debris234, 768, 769, 770
pathology203
PEEK761, 769, 801, 813, 830
percutaneous206, 72
permeability679
phase separated polymer290, 370
pHEMA882
plasma protein231
plasma spray295, 739
platelet ...231, 238, 314, 366, 371, 450, 609, 819
polydioxanone849
polyethylene (UHMWPE) .146, 39, 40, 41, 43, 46, 571, 740, 742, 745, 747
polyethylene-terephthalate130, 453
polymer113, 114, 121, 124, 126, 128, 136, 138, 145, 151, 167, 17, 178, 192, 20, 232, 29, 30, 326, 327, 329, 330, 335, 344, 358, 368, 424, 426, 457, 499, 501, 509, 512, 540, 574, 582, 586, 594, 597, 599, 60, 61, 628, 655, 663, 667, 694, 696, 697, 698, 7, 706, 717, 719, 766, 779, 780, 8, 80, 819, 837, 840, 843, 845, 846, 848, 850, 853, 855, 857, 858, 863, 865, 872, 877, 879, 881, 885, 891, 914, 921, 927
polymerization150, 177, 287, 438, 780, 839, 844, 846, 859, 876
polyurethane(s)118, 133, 18, 241, 3, 31, 333, 398, 440, 45, 471, 480, 497, 514, 583, 74, 869, 887, 906, 919, 920
porosity .435, 474, 479, 483, 496, 503, 517, 541, 622, 627, 759, 772, 811, 909
porous coated116, 591, 866
protein adsorption126, 133, 134, 14, 233, 236, 238, 271, 272, 29, 35, 38, 425, 427, 431, 440, 443, 595, 597, 815, 817, 870, 889
protein conformation236, 238, 449
radiation18, 794, 798, 881, 914
regenerative medicine11, 181, 283, 324, 346, 380, 383, 515, 531, 611, 681, 749, 892, 896, 900, 902
retina541
rigidity215, 217, 53, 684
scaffolds100, 122, 13, 152, 159, 160, 166, 169, 170, 172, 173, 196, 198, 20, 242, 250, 268, 269, 282, 293, 320, 322, 359, 360, 377, 379, 385, 386, 387, 392, 404, 416, 431, 437, 467, 474, 475, 476, 483, 484, 485, 487, 49, 490, 491, 492, 493, 495, 497, 498, 499, 50, 504, 505, 507, 512, 513, 516, 517, 523, 524, 526, 527, 529, 530, 54, 545, 552, 556, 560, 652, 658, 660, 668, 677, 683, 685, 691, 696, 7, 726, 751, 763, 765, 775, 78, 792, 808, 811, 842, 847, 863, 896, 901, 902, 904, 908, 913, 932, 97
sensor423, 825, 932
silicone(s) PDMS344, 345, 584, 90, 909
smart materials ...138, 147, 151, 17, 18, 193, 195, 196, 227, 317, 330, 331, 57, 572, 574, 575, 577, 579, 580, 581, 582, 583, 59, 744, 807, 85, 859, 876, 921
spinal implant.262, 365, 743, 799, 917, 920
stability296, 36, 449, 919
stainless steel34, 821
stem/progenitor cells 13, 158, 185, 186, 187, 188, 189, 197, 239, 240, 249, 251, 278, 279, 302, 303, 304, 318, 319, 320, 321, 323, 325, 346, 351, 355, 371, 373, 374, 375, 376, 377, 382, 384, 386, 387, 389, 390, 391, 392, 393, 394, 398, 399, 401, 403, 404, 405, 433, 436, 439, 461, 471, 508, 521, 523, 535, 546, 558, 567, 570, 592, 593, 656, 684, 7, 712, 748, 749, 768, 831, 89, 894, 899, 903, 99
stents 110, 202, 206, 315, 641, 76, 807, 828
sterilization757
stress527, 808
stress cracking758
stress shielding811
surface analysis .22, 272, 501, 622, 746
surface characterization ...174, 272, 35, 38, 602, 661, 810, 814, 815, 816, 818, 836, 865, 871
surface modification10, 110, 129, 132, 135, 185, 200, 21, 219, 23, 25, 27, 271, 274, 275, 276, 31, 315, 34, 342, 35, 352, 36, 401, 415, 421, 430, 431, 482, 494, 530, 534, 544, 565, 580, 590, 591, 6, 600, 604, 715, 718, 741, 773, 777, 786, 793, 812, 813, 817, 818, 819, 824, 828, 829, 830, 833, 87, 872, 880, 888, 890, 923, 928
sustained release104, 150, 315, 59, 687, 688, 692, 93
suture115, 367
tears665
test method .137, 41, 555, 75, 788, 799
thrombogenicity118, 127, 631, 75, 826, 890
tissue adhesion 144, 518, 569, 699, 893
tissue culture200, 310, 478
tissue engineering10, 100, 115, 122, 13, 152, 153, 165, 170, 173, 200, 208, 213, 218, 243, 244, 249, 253, 263, 269, 279, 280, 283, 284, 285, 305, 349, 351, 372, 374, 380, 383, 385, 386, 395, 397, 403, 404, 406, 411, 416, 460, 461, 462, 470, 475, 481, 485, 487, 488, 489, 492, 495, 498, 504, 507, 509, 511, 512, 521, 523, 526, 527, 532, 533, 534, 536, 537, 539, 54, 544, 545, 550, 551, 555, 557, 566, 568, 580, 596, 61, 615, 656, 659, 660, 667, 668, 69, 730, 748, 751, 755, 77, 783, 792, 802, 831, 842, 850, 860, 871, 89, 905, 907, 910, 92, 926, 94, 97
titanium (alloys)131, 135, 182, 257, 258, 4, 414, 474, 479, 5, 516, 6, 741, 812
total joint replacement745, 770
toxicity364, 603, 70, 707, 788
tribology .256, 258, 260, 261, 787, 789, 806
tumor102, 287, 288, 48, 51, 53, 670, 671, 672, 707, 710, 714, 821, 931
urology/urological engineering 137, 268
vascular11, 112, 141, 203, 266, 280, 308, 327, 333, 428, 536, 546, 557, 598, 894, 98
vascular graft .210, 241, 281, 282, 383, 409, 440, 547, 678, 75
vascular prosthesis560, 561, 562
vascular stents 204, 421, 564, 565, 685, 922
vertebral743
viscoelastic806, 845, 914, 915
viscosity852
wear 143, 146, 39, 40, 42, 45, 741, 746, 747, 799, 801, 805
wear debris444, 456
wound dressings223, 854, 915
wound healing 227, 393, 433, 441, 571, 614, 63, 631, 66, 662, 836, 893