

Author index

The work of the author mentioned is cited on the page(s) indicated

- Aaronson, H. I. 118, 373
 Abbaschian, G. S. 340
 Abbott, G. L. 444
 Abis, S. 381
 Aboudi, J. 171
 Abukay, D. 291, 444, 445, 446
 Achim, P. 338
 Adams, D. F. 224, 225
 Adams, P. D. 303
 Adreani, C. 419, 420
 Agarwala, V. S. 311, 312
 Agassant, J. F. 436
 Aggour, L. 205, 207
 Aghajanian, M. K. 327
 Ahearn, J. S. 192, 207
 Ahmad, I. 193
 Akai, T. 329
 Akeyama, K. 469
 Akiyama, S. 143
 Akutagawa, K. 296
 Alam, M. K. 204
 Albingre, L. 158
 Albrecht, J. 256
 Alcock, C. B. 191
 Allard, L. F. 374
 Allen, A. J. 419, 420
 Amateau, M. F. 205, 207, 303, 305, 307, 323
 Ameyama, K. 173
 Anderson, R. G. 149, 150, 153
 Andrieu, E. 145, 146, 149, 154
 Ansell, G. S. 125
 Arajs, S. 291, 444, 445, 446
 Arakawa, H. 446, 469
 Ard, K. E. 159
 Ardakani, M. 384, 387
 Argon, A. S. 235
 Armstrong, J. H. 307
 Arsenault, R. J. 66, 77, 80, 84, 86, 187, 239, 247, 261, 359, 373, 374, 416, 419, 420, 435
 Arzt, E. 130
 Asaka, K. 353
 Asaro, R. J. 170
 Ashby, D. J. 308
 Ashby, M. F. 8, 11, 88, 125, 127, 130, 234, 237, 241, 248, 262, 265, 267, 268, 269, 295, 370, 480
 Asthana, R. 340
 Atkinson, C. 179
 Atkinson, J. D. 94, 411, 413
 Auger, J. P. 265
 Austin, M. W. 420
 Avery, A. J. 277, 278, 279, 289
 Awerbuch, J. 450, 451, 452
 Aylor, D. M. 311, 312
 Bader, M. G. 324
 Baker, A. A. 205, 305, 306, 307
 Baker, C. 71, 72
 Bakuckas, J. G. 450, 451, 452
 Balasubramanian, N. 205
 Ballufi, R. W. 130
 Bampton, C. C. 66
 Barbalat, F. 336
 Barlow, C. Y. 106, 373, 376, 377
 Barr, T. L. 301, 302
 Barranco, J. 193
 Barthole, M. 332
 Bauschinger, J. 410
 Bay, B. 129
 Bayoumi, M. A. 340
 Beals, J. T. 133
 Beevers, C. J. 253, 254

- Bengtsson, S. 195, 324, 330, 332, 438, 439
 Benveniste, Y. 279
 Berard, M. F. 206
 Berglin, L. 336
 Berman, R. 277
 Bernstein, I. M. 256
 Bethoney, W. M. 408, 409
 Bhagat, R. B. 303, 305, 307, 323
 Bhansali, K. J. 296
 Bibring, H. 142, 344, 345
 Birchall, J. D. 324
 Bishop, J. F. W. 149, 150, 153
 Blain, C. 336
 Blessing, G. V. 406
 Bolling, G. F. 340, 342
 Bondt, S. De 451, 452
 Boreton, M. F. 255, 259
 Borrowdaile, J. B. 71, 72
 Bottom, V. E. 448
 Bouix, J. 207
 Bourdillon, A. J. 231, 383
 Bourell, D. L. 373, 374
 Bourke, M. 81, 82, 111, 420
 Bouvaist, J. 66, 132, 133
 Bowen, A. 384, 387
 Bowen, P. 253, 254
 Bowes, D. E. 448
 Bowles, D. E. 122
 Bowles, P. R. 460
 Bowles, R. R. 460
 Bowman, H. A. 441
 Boyd, J. D. 205
 Brabers, M. J. 191–2
 Braem, M. 406
 Brandes, E. A. 480
 Brechet, Y. 242
 Bretheau, T. 262
 Breval, E. 345
 Brindley, P. K. 183, 188, 195
 Briscoe, B. J. 422, 426
 Brockenbrough, J. R. 39
 Brooks, R. G. 334
 Brown, L. M. 57, 59, 75, 86–9, 93, 94, 96,
 100, 104, 105, 109, 125, 128, 129, 235,
 237, 379, 411–3, 438, 481
 Browne, C. M. 414, 415
 Brun, M. K. 200, 358
 Brune, J. E. 418
 Brusethaug, S. 351
 Buekenhout, L. 346
 Buesking, K. 452
 Bunge, H. J. 430
 Burghoff, H. L. 445
 Burke, J. T. 327
 Bushby, R. S. 358
 Butler, C. P. 444
 Buttle, D. J. 236, 452
 Byron Pipes, R. 437
 Caldemaison, D. 262
 Camping, M. 358
 Cantor, B. 335
 Cao, H. C. 179, 183
 Cappelman, G. R. 195, 324, 332
 Carpenter, R. W. 383
 Carrara, A. S. 36
 Cawthorne, D. 441
 Cecil, G. 57, 422, 423, 426
 Chadwick, G. A. 358
 Chalmers, B. 340, 342
 Chambers, A. R. 358
 Chamis, C. C. 438
 Chandrasekaran, M. 192, 193
 Chandrasekhar, R. 307
 Chang, D. J. 416
 Chang, M. 141, 347
 Chapman, P. F. 387
 Charalambides, P. G. 169, 170, 175, 179, 183
 Charbonnier, J. 323
 Charles, D. 459
 Charles, J. A. 3, 11, 80, 81, 135, 195, 332
 Chatterjee, A. 4, 11
 Chawla, K. K. 373, 376, 379
 Chellman, D. J. 74, 236, 400, 406, 452
 Chen, I. W. 102
 Chen, Y. C. 356, 357
 Chen, Y. T. 406
 Cheng, H. S. 296
 Chengfu, W. 175
 Chernov, A. A. 340, 342
 Cheskis, H. P. 109, 420
 Chesney, P. F. 296, 457, 334
 Chi, F. 461
 Chiao, Y. H. 102
 Chiba, A. 446
 Chin, E. S. C. 253
 Choi, B. H. 136, 145, 149, 220, 221
 Choi, S. K. 191, 192
 Chorley, E. M. 56
 Chottiner, G. S. 383
 Chou, S.-C. 416
 Chou, T. W. 24, 171, 437, 438
 Christman, T. 37–9, 73, 74, 86, 240, 252,
 255, 373, 381
 Christodoulou, L. 346
 Chua, P. S. 180
 Cisse, J. 340, 342
 Claar, T. D. 345
 Clarke, D. R. 75, 89, 93, 109, 438, 481
 Clegg, A. J. 330
 Clegg, W. J. 106, 130, 196
 Cline, H. E. 344
 Clyne, T. W. 19, 24, 26, 30–3, 56, 57, 80,
 81, 99, 103, 120, 122, 129, 132, 134,
 136, 145, 147, 154, 157, 171, 180–8,
 191–9, 204–10, 232, 236, 238, 239, 241,
 262, 280, 285, 286, 290, 319, 323, 324,

- Clyne, T. W. (*cont.*) 330, 332, 336, 338,
 342, 347, 351, 354, 376, 383–95, 420,
 422–5, 426, 441–8
- Cohen, J. B. 420
- Colclough, A. 149
- Cook, J. 175
- Copley, S. M. 77
- Cornie, J. A. 324, 330, 340
- Costello, J. A. 310
- Cottrell, A. H. 149, 150
- Couper, M. J. 319
- Coutard, B. 133
- Couzi, M. 192, 193, 347
- Cox, B. N. 187, 254
- Cox, H. L. 20
- Crampton, D. K. 445
- Cratchley, D. 224, 227, 228
- Crawley, E. F. 307
- Crosland, I. G. 130
- Crouse, R. S. 430
- Crowe, C. R. 66, 248, 249, 256, 259, 262,
 263, 311, 312, 346
- Cruege, F. 191, 192, 347
- Dadkhah, M. S. 187
- Daehn, G. S. 147, 149, 150–2, 356, 357
- Dafir, D. 319, 321
- Dahlem-Klein, E. 430
- Dahotre, N. B. 301, 302
- Dalgleish, B. J. 169, 170, 175, 183
- Dandekar, D. P. 268
- Dannemann, K. 344
- Darby, N. A. 336
- Darvish, F. A. 452
- Das, A. A. 330
- Das, G. 269
- Dasgupta, D. 416
- DaSilva, R. 262
- Dauphin, J. 455, 459
- Davidson, D. L. 251, 255, 257, 259
- Davies, G. J. 357
- Dawes, S. 420
- Dayal, V. 406
- Dearnley, P. A. 336
- DeBondt, S. 446
- Delaey, L. 346
- Delannay, F. 143, 144, 175, 207, 249, 327
- Dellis, M. A. 175
- Demetry, C. 133
- Dempster, B. 149
- Derby, B. 147, 149, 150, 152, 236, 264, 452
- Dermarkar, S. 323
- Deruyterre, A. 207, 327, 446, 451, 452
- DeSilva, A. R. T. 77
- Dhindaw, B. K. 340, 342, 343
- DiCarlo, J. A. 303
- Dieter, G. E. 307, 353
- Dignard-Bailey, L. 257
- Dinwoodie, J. 265, 266, 460
- Dionne, S. 257
- Divecha, A. P. 147, 154
- Diwanji, A. P. 330
- Dixon, W. 461, 462, 464, 465
- Djazez, M. R. 383, 384, 391, 394, 395
- Doherty, R. D. 431
- Dollar, M. 256
- Dolowy, J. F. 466, 467
- Doner, D. R. 224, 225
- Donomoto, T. 329, 460, 461
- Donzelli, G. 381
- Dorcic, J. L. 322
- Dorn, J. E. 127, 129
- Dow, N. F. 20
- Downes, T. J. 257, 258, 261
- Dragone, T. L. 139, 140
- Driver, D. 459, 469, 470
- Dumant, X. 143, 468
- Dunand, D. C. 101, 371, 372
- Dunlop, H. 191, 199, 202, 203, 262
- Dunn, B. D. 455, 459
- Dunn, M. 132, 136, 139
- Duquette, D. J. 344
- Duszczyc, J. 347
- Dutta, I. 373, 374
- Dvorak, G. J. 253, 254
- Dykhuzer, R. C. 338
- Dytkowicz, A. 344
- Earmme, Y. Y. 118, 373
- Easterling, K. E. 261
- Ebisawa, M. 466, 467
- Edgecumbe, T. S. 383
- Edwards, G. 234, 237, 241, 262
- Edwards, L. F. 195
- Ehrstrom, J. C. 353, 354
- El-Dahshan, M. E. 310
- Eldridge, J. I. 183, 195
- Embury, J. D. 82, 234, 237, 241, 242, 262,
 265, 266, 267, 268, 269, 270, 409
- Endo, T. 141
- Eng, S. M. 182
- Erdogan, F. 252
- Eselun, S. A. 448
- Eshelby, J. D. 45, 46, 57, 67, 68, 96
- Evans, A. G. 169, 170, 175, 179, 183, 209,
 254
- Evans, D. G. 338
- Evans, R. W. 334
- Evensen, J. D. 236
- Everett, R. K. 204, 348
- Exner, H. E. 438
- Fages, J. 323
- Farris, R. J. 338
- Faure, A. 319, 321
- Favry, Y. 149

- Fedou, R. 324, 330
 Feest, E. A. 431, 459, 460
 Felbeck, R. K. 452
 Feng, C. R. 84
 Fenot, F. 143
 Fine, M. E. 255, 256, 257, 296
 Firestone, R. F. 357
 Fischmeister, H. F. 261
 Fisher, J. R. 234, 262
 Fisher, M. 373
 Fitzer, E. 205, 207
 Flemings, M. C. 324, 330, 338, 340, 344
 Flitcroft, S. M. 71, 72
 Flom, Y. 66, 187, 239, 247, 261
 Flower, H. 191, 192
 Folgar, F. 459
 Folgar-Portillo, F. 296
 Ford, R. 456
 Foreman, A. J. E. 94
 Francini, R. B. 416
 Francois, D. 265
 Frankel, J. 268
 Frechette, V. D. 168
 Frederick, J. R. 452
 Friend, C. M. 324, 332
 Frisby, C. 406
 Fritscher, K. 344
 Froes, F. H. 347
 Frost, H. J. 125, 127, 480
 Froyen, L. 207, 327, 346, 446, 451, 452
 Fujita, T. 351
 Fujiwara, H. 420
 Fukube, Y. 205, 350
 Fukuda, H. 24
 Fukununga, H. 330, 332
 Fukushima, T. 336
 Funatani, H. 329
 Funatani, K. 460, 461
 Furness, J. A. G. 132, 136, 147, 154, 156, 448
 Gabryel, C. 346
 Gahm, H. 430
 Gardiner, K. M. 153
 Gardiner, R. W. 350
 Garibotti, J. F. 469
 Garvare, T. 193
 Geiger, G. H. 480, 278, 279
 Geis, R. H. 432
 Geng, L. 133
 Gerdeen, J. C. 344
 Ghosh, A. K. 66
 Girot, F. 133, 324, 330
 Glazer, J. 383
 Gnilomedov, A. A. 134, 135
 Goddard, D. M. 205
 Goering, J. 452
 Goldsmith, A. 278, 279, 289
 Goldstone, J. A. 81, 82, 111
 Gonzalez-Doncel, G. 134, 147, 149, 150, 152
 Goodhew, P. J. 336
 Goodier, J. N. 67
 Goods, S. H. 235
 Gordon, F. H. 203, 280, 284, 285, 290
 Gordon, J. E. 175
 Goree, J. G. 459
 Gorley, T. A. E. 408
 Gorsler, F. 358
 Gosh, A. K. 192, 347
 Goto, S. 136, 141
 Grant, P. S. 335
 Gray, R. A. 66, 248, 249, 259, 262, 263
 Gray, R. J. 430
 Greem, J. L. 416
 Green, J. S. 311
 Greenwood, G. W. 150
 Greil, P. 327
 Griffith, A. A. 242
 Grong, O. 358
 Gruner, H. 336
 Gu, B. P. 383
 Gudmundsson, B. 336
 Guild, F. J. 303
 Gunnink, J. W. 456
 Guo, X. 336, 338
 Gurland, J. 234, 262
 Haaland, R. S. 187, 188, 383
 Haar, J. H. T. 347
 Hahn, G. T. 246, 248
 Hahn, H. T. 66, 184, 186
 Hains, R. W. 338
 Hale, D. K. 279
 Hall, E. O. 85
 Hall, I. W. 158, 222, 330
 Halpin, J. C. 15, 415
 Hanabusa, T. 420
 Hanna, W. D. 416
 Hansen, N. 3, 10, 85, 103, 106, 129, 347, 373, 376, 377, 384, 387, 388, 391, 393, 395
 Harding, J. 264
 Harmouche, M. R. 403, 406
 Harper, J. G. 127
 Harris, D. O. 452
 Harris, S. J. 257
 Hartley, M. V. 309
 Hartman, G. A. 448
 Hasegawa, H. 266
 Hasegawa, J. 296
 Hasselman, D. P. H. 279, 286
 Hasson, D. F. 66, 248, 249, 256, 259, 262, 263
 Hatta, H. 280, 283, 286

- Haues, S. V. 403, 406
 Hausselt, J. H. 129
 Hava, T. 466, 467
 Hay, D. R. 400, 406
 Hayashi, T. 466, 467
 He, M.-Y. 170, 175
 Heath, P. J. 358
 Heckel, R. W. 109, 420
 Hefferman, W. 193
 Hellman, J. R. 184, 186
 Herakovich, C. T. 448
 Heritage, K. 406
 Heym, M. 205, 207
 Hill, D. N. 193
 Hill, R. 227
 Hinton, E. 35
 Hirsch, P. B. 100
 Hirschhorn, H. J. 278, 279, 289
 Hirth, J. P. 247
 Ho, C. Y. 444
 Ho-Cheng, H. 359
 Hoffman, C. A. 158
 Hoffmann, D. W. 210
 Hon, K. K. B. 357
 Hong, S. H. 147, 154
 Hoover, W. R. 338, 461, 462, 464, 468
 Horl, E. M. 430
 Horsefall, I. 196, 324, 332
 Hosking, F. M. 296
 Howard, P. 336, 338
 Howard, S. J. 196, 198, 200
 Howe, J. M. 383
 Howitt, D. G. 432
 Hsueh, C. H. 182, 183, 184–6
 Hu, M. S. 169, 179
 Huang, G. C. 38
 Huber, S. 403, 406
 Hughes, I. R. 336
 Hughes, M. J. 441
 Hull, D. 308, 436
 Humphreys, F. J. 84, 85, 86, 92, 94, 100,
 370, 383, 384, 388, 391, 384, 387–9,
 391, 394, 395
 Hunderi, O. 391
 Hunt Jr., W. H. 438, 439, 440
 Hunt, M. 459
 Hunt, W. H. 240, 241, 261, 262, 263, 264
 Hunt, W. H. 347
 Hutchings, I. M. 296, 297, 298, 299, 300
 Hutchings, M. T. 419, 420
 Hutchinson, J. W. 169, 170, 175

 Ibbotson, A. R. 253, 254
 Iesan, D. 30
 Ignatowitz, E. 205, 207
 Im, J. 235
 Imagawa, K. 143

 Irani, J. J. 4, 11
 Irving, R. R. 455
 Irwin, G. R. 244
 Ishikawa, T. 30
 Ismail, H. S. 357
 Ito, S. 353
 Iwamoto, M. 450, 451
 Iwanari, H. 264
 Izaguirre, F. 416

 Jackson, K. A. 340, 342
 Jackson, M. R. 193, 206, 210, 338
 Jackson, P. W. 224, 227, 228
 Jacobsen, B. E. 336
 Jain, S. C. 204
 James, M. R. 187
 Jarry, P. 66, 132, 133, 145, 146, 149, 154
 Jeandin, M. 336
 Jeanjaquet, S. L. 312
 Jech, R. W. 406
 Jeglitsch, F. 430
 Jena, P. 187
 Jeng, S. M. 183, 188, 190, 195
 Jenkins, R. J. 444
 Jensen, D. J. 80, 102, 103, 145, 347, 384,
 387, 388, 391, 393, 395, 419, 420, 436,
 437, 438
 Jero, P. D. 185
 Jessop, H. T. 425
 Jha, A. K. 301, 346
 Jinen, E. 450, 451
 Johnson, C. 236, 452
 Johnson, L. 370
 Johnson, L. F. 279, 286
 Johnson, M. A. 245, 246, 248
 Johnson, R. H. 149, 150
 Johnson, W. S. 158, 253
 Jolly, M. R. 459
 Joly, P. A. 338
 Jones, D. R. H. 480
 Jones, C. 192
 Jones, R. B. 130
 Jones, R. M. 228
 Jong, E. 191, 192
 Jordan, R. M. 336
 Jowett, C. 338
 Judd, M. D. 455, 459

 Kacar, A. S. 340, 342, 343
 Kagawa, Y. 359
 Kahl, W. 334
 Kain, R. M. 311, 312
 Kallas, M. N. 184, 186
 Kamat, S. 247
 Kanani, T. 446
 Kannikeswaran, K. 191
 Karlak, R. F. 66, 71

- Karmarkar, S. D. 147, 154
 Kasakov, N. F. 347
 Kattamis, T. Z. 340
 Katzman, H. A. 207
 Kawaga, Y. 220, 221
 Keck, S. D. 327
 Kelly, A. 93, 136, 220, 221, 480
 Kelly, J. F. 262, 438, 439
 Kendall, E. G. 123, 205, 307
 Kennedy, A. R. 342, 343
 Kennedy, C. R. 345
 Kennedy, J. M. 408, 409, 410
 Kennerknecht, S. 468
 Kerans, R. J. 168, 179, 183, 185, 186
 Kershaw, J. P. 223
 Keustermans, J. P. 175, 249
 Khan, M. A. 340
 Khan, T. 142, 344, 345
 Kidd, J. A. 408, 409
 Kiely, C. J. 192
 Kieschke, R. R. 33, 183, 188, 205, 206, 207,
 210, 338, 420
 Kim, C. T. 373, 374
 Kim, J. H. 174
 Kim, S. 312
 King, J. E. 257, 258, 261
 Kinra, V. K. 307, 406
 Kitahara, S. 336
 Kitamwa, A. 158
 Kitihara, A. 144
 Kjems, J. K. 419
 Klein, M. J. 173
 Klemens, P. G. 445
 Klimowicz, T. F. 263, 264
 Klundt, R. H. 126, 376
 Knott, J. F. 240, 243, 244, 255, 257, 258,
 440
 Knowles, D. M. 257, 258
 Kobayashi, S. 30
 Kobayashi, T. 264
 Kofstad, P. 193, 206, 310
 Kogo, Y. 359
 Kohara, S. 205
 Koike, K. 450, 451
 Koizuma, M. 351
 Konitzer, D. G. 199
 Kool, W. H. 353, 354
 Korman, W. J. 268
 Koss, D. A. 77, 184, 186
 Kowalski, K. A. 336, 338
 Koyoma, K. 30
 Krawitz, A. D. 418, 420
 Kreider, K. G. 123
 Kreuger, W. H. 459
 Krieder, K. R. 221, 222, 223
 Krishnamurty, S. 118
 Kristiansen, K. 437, 438
 Kroger, S. 430
 Kubaschewski, O. 191
 Kuhlmann-Wilsdorf, D. 301
 Kulkarni, A. G. 205
 Kumai, S. 257, 258
 Kumosa, M. 452
 Kunerth, D. 404, 406
 Kuniya, K. 446, 469
 Kupperman, D. 420
 Kural, M. H. 143
 Kurihara, N. 143
 Kuriyama, K. 358
 Kuroda, S. 336
 Kvernes, I. 193, 310
 Kyono, T. 158, 222
 L'Estrade, L. 336
 Lagace, P. A. 408, 409, 410
 Lahaye, M. 173, 191, 192, 347
 Lajoie, L. 343
 Lambrechts, P. 406
 Lamé, G. 67
 Lane, C. T. 358
 Langdon, T. G. 133
 Langman, C. A. 265, 266
 Lare, P. J. 66
 Larsson, L. O. K. 193
 Lavernia, E. J. 131
 Lawley, A. 374, 376, 400, 406
 Lawrence, P. 180
 Lawson, A. C. 81, 82, 111
 Le Flour, J. C. 145, 147, 149
 Leatham, A. G. 334
 Leborgne, G. 332
 Ledbetter, H. M. 420
 Lederich, R. J. 71, 84
 Lee, C. H. 193, 204, 206
 Lee, H. J. 431
 Lee, J. K. 118, 373, 374
 Lee, M. 358
 Lee, S. 414
 Leffers, T. 419, 433
 Lemmens, J. W. 406
 Lentz, J. P. 143, 144
 Lepetitcorps, Y. 133, 173, 180, 187, 188,
 190, 324, 330, 332
 Leshner, H. D. 345
 Leslie, B. C. 430
 Leupp, J. 334
 Levadou, F. 455, 459
 Levi, C. G. 340
 Levitt, A. P. 480
 Levy, A. 37, 38, 39, 40, 41, 74, 77, 82
 Lewandowski, J. J. 231, 240, 241, 257, 259,
 261, 263, 264, 265, 267, 268, 383
 Lewis, C. A. 442
 Lewis, D. 346
 Li, C. H. 195, 324, 330, 332

- Li, S. 187
 Liang, F. 327
 Liedel, G. L. 383
 Lilholt, H. 80, 94, 109, 132, 136, 139, 145,
 413, 416, 419, 420, 436, 437, 438
 Lim, S. C. 295
 Lin, M. 301, 302
 Lin, R. Y. 191
 Lin, S. 312
 Lindbo, J. 433
 Lips, B. 175, 249
 Liptai, R. G. 450
 Little, J. A. 310
 Liu, C. 240, 241, 257, 261, 263, 264, 383
 Liu, D. S. 265, 267, 268
 Liu, Y. L. 103, 301, 302, 343, 384, 387, 388,
 391, 393, 395
 Lloyd, D. J. 133, 191, 193, 231, 241, 242,
 259, 263, 338, 340, 341, 343, 344, 346,
 348, 357, 401, 406, 413, 416
 Lo, S. H. 257
 Lobb, R. C. 149
 Locicéro, R. 145, 147, 149
 Lorentzen, T. 89, 92, 419, 420
 Loretto, M. H. 3, 199
 Lorimer, G. W. 382
 Loué, W. 66, 132, 133
 Lovato, M. 81, 82, 111
 Lovell, M. C. 277, 278, 279, 289
 Lu, T. C. 336
 Lubanska, H. 335
 Lugscheider, E. 336
 Lulay, K. E. 413, 416
 Lund, J. 179
 Lund, R. W. 125, 129
 Luo, L. 242
 Luquet, P. 336
 Luton, M. J. 127, 264, 265
 Luxton, S. D. 324, 332
 Lvov, A. A. 134, 135
 Lynch, C. T. 223
 Lytton, J. L. 129
- MacDonald, B. A. 147, 154
 MacEwen, S. R. 81, 82, 111
 Maciejny, A. 344
 Maekawa, Z. 450, 451
 Mahajan, Y. R. 133
 Mahalinagam, K. 383
 Maheshwari, M. D. 4, 11
 Mahmoodi, P. 406
 Mahon, G. J. 383
 Mahoney, M. W. 66
 Mahulikar, D. 419, 420
 Maisel, J. E. 303
 Majumdar, S. 420
 Makel, D. D. 301
 Makin, M. J. 94
- Mancini, D. L. 460
 Mannan, S. K. 346
 Manoharan, M. 231, 259
 Mansfeld, F. 312
 Marantz, D. R. 336, 338
 Marcus, H. L. 158, 419, 420
 Margolin, H. 327
 Marsden, K. 459
 Marshall, D. B. 183, 187, 254
 Martin, J. W. 130
 Martineau, P. 191, 192, 347
 Masaru, M. H. 158
 Mason, J. F. 77, 80, 81, 99, 134, 135, 191,
 194, 195, 323, 324, 328, 330, 332
 Massardier, V. 319, 321
 Masur, L. J. 324, 330
 Masutti, D. 143, 144
 Matsubara, H. 158, 358
 Matsuda, N. 133, 141
 Matsuura, K. 133, 141
 Matthewman, D. J. 194
 McCafferty, E. 311, 312
 McCartney, L. N. 408
 McConnel, M. D. 193, 206, 210
 McConnell, M. C. 350
 McCoy, J. W. 343
 McCracken, D. 310
 McCullough, R. L. 437
 McDanel, D. L. 28, 66, 71, 240, 241, 265,
 266, 406
 McElroy, R. J. 86
 McEnaney, B. 311
 McGarry, F. J. 36
 McLean, D. 136
 McLean, M. 136, 141
 McLeod, A. D. 191, 346
 McMeeking, R. M. 81, 179, 246
 McPherson, R. 338
 Mear, M. E. 169
 Mehan, R. L. 193, 216, 210, 338, 406
 Mehrabian, R. 247, 296, 338, 340
 Meifang, Y. 175
 Melnikova, A. M. 340, 342
 Merle, P. 319, 321
 Metcalfe, A. G. 173
 Metzger, M. 373, 376, 379
 Michal, G. M. 383
 Michaud, V. J. 324
 Midling, O. T. 358
 Mikata, Y. 30, 31, 118
 Mileiko, S. T. 136
 Milidantri, G. 336, 338
 Miller, A. K. 126, 376
 Miller, W. S. 84, 85, 383, 384, 391, 394,
 395
 Min, B. K. 144
 Minet, R. 468
 Minoda, Y. 266

- Minorikawa, H. 469
 Mishra, R. S. 133
 Misra, M. S. 307, 374
 Miura, N. 460, 461
 Miyake, N. 460, 461
 Miyazaka, K. 353
 Miyazaki, M. 296
 Mockford, M. J. 324
 Modi, O. P. 311, 312
 Mohamed, F. A. 131
 Moitra, A. 340, 343, 343
 Mollard, F. R. 344
 Monzen, R. 303, 305
 Moore, E. 265, 266
 Moreton, R. 71, 72
 Mori, T. 57, 59, 88, 100, 101, 136, 154, 235,
 303, 305, 371
 Morimoto, H. 353
 Morin, D. 207
 Moritz, R. 353
 Morris, J. W. 383
 Morris, P. L. 71, 338, 343, 346
 Morris, W. L. 187
 Mortensen, A. 101, 324, 330, 371, 372
 Mott, N. F. 3, 10
 Mourichoux, H. 207
 Muhly, J. D. 3, 10
 Mukherjee, T. 4, 11
 Mullins, J. W. 263
 Mummery, P. M. 236, 452
 Munro, M. 414
 Mura, T. 482, 49, 55, 101
 Murakami, Y. 173
 Murali, N. 307
 Muto, N. 205
 Myers, C. L. 129
 Myers, M. R. 461
- Nabarro, F. R. N. 3, 10
 Naeem, M. 359
 Nagata, S. 143
 Nagelberg, A. S. 327
 Naik, R. A. 158
 Nakamura, K. 205, 350
 Nakamura, T. 235
 Nakanishi, H. 450, 451
 Nakanishi, M. Y. 158
 Nakano, K. 158
 Narayan, R. 307
 Nardone, V. C. 24, 66, 128, 129, 132, 133
 Naslain, R. 173, 180, 187, 188, 189, 192,
 207, 327, 330, 347
 Nath, D. 307
 Nathan, M. 192, 207
 Navara, E. 261
 Needleman, A. 36, 37, 38, 39, 73, 74, 81,
 82, 86, 111, 240, 252, 373, 381
- Nes, E. 391
 Newkirk, M. S. 345
 Nguyen, D. 256
 Nicolson, R. B. 382
 Nieh, T. G. 66, 71, 74, 131, 133, 400, 406
 Nielsen, L. E. 279
 Niihara, K. 351
 Niklas, A. 346
 Nimmer, R. 200
 Nishida, Y. 158, 358
 Nishioka, K. 420
 Niskaenen, P. W. 351
 Nix, W. D. 125, 129, 139, 140, 183
 Noda, S. 143
 Nomura, S. 438
 Nourbakhsh, S. 327
 Novak, D. L. 311
 Noyan, I. C. 419, 420
 Nunes, J. 253
 Nunes, W. M. 408, 409
 Nutt, S. R. 36, 39, 81, 82, 111, 204, 207,
 383
 Nyborg, L. 195, 324, 330, 332
 Nye, J. F. 18, 278, 279
- Oberkampf, W. L. 336, 338
 Ochiai, S. 173
 Oddy, W. A. 441
 Oel, H. J. 168
 Ogilvey, A. 334
 Ohsaki, T. 205, 350
 Ohtsuki, H. 296
 Ohuchi, K. 353
 Okabe, M. 101
 Okamoto, T. 351, 358
 Olefirenko, V. I. 173
 Olefjord, I. 195, 324, 330, 332
 Oliver, W. C. 183
 Ono, K. 236, 452
 Onzawa, T. 174
 Ordway, F. 66
 Orowan, E. 3, 10
 Ostermier, P. 340
 Otani, T. 311
 Otsuka, M. 143
 Outwater, J. O. 20
 Øvland, S. 437, 438
 Owen, D. R. J. 35
 Oyama, T. 150
- Paciej, R. C. 311, 312
 Padkin, A. J. 255, 259
 Padmannabhab, K. A. 357
 Pagano, N. J. 415
 Pai, B. C. 205
 Pailler, R. 158, 173, 180, 187, 188, 190,
 192, 347
 Pan, Y. M. 296

- Pandey, A. B. 133
 Papadakis, E. P. 403
 Papazian, J. M. 37, 38, 39, 40, 41, 74, 77, 82
 Pape, S. 257, 383
 Parathasarathy, T. A. 168, 179, 183, 185
 Paris, P. 252
 Park, K. T. 131
 Parker, W. J. 444
 Parrish, P. A. 346
 Partridge, P. G. 347, 348, 349, 350
 Patankar, S. V. 35
 Patrani, V. M. 123
 Patterson, W. G. 145, 146
 Pechersky, M. J. 303, 305, 307
 Pedersen, O. B. 77, 80, 97, 49, 57, 59, 64, 68, 75, 87, 88, 92, 94, 96, 109, 110, 411, 413, 416, 482
 Peel, C. J. 71, 72
 Pepper, S. V. 187
 Petch, N. J. 85
 Peters, D. M. 480
 Petrasek, D. W. 294
 Phillipps, A. J. 196, 198, 200
 Phillips, R. R. 406
 Phillips, W. L. 266
 Piatti, G. 336
 Pickard, S. M. 147, 149, 150, 152, 264
 Pierson, H. O. 206
 Piggott, M. R. 180
 Pigott, G. H. 324
 Pilkington, R. 253
 Pindera, M. J. 415, 416, 225
 Pinnel, M. R. 374, 376, 400, 406
 Pinto, P. J. 324
 Plichta, M. R. 373, 374
 Plumbridge, W. J. 255, 259
 Pohlman, S. L. 311
 Poirier, D. R. 278, 279, 80
 Polakowski, N. H. 409, 416
 Pollock, W. D. 158
 Pond, J. B. 358
 Ponthenier, J. L. 207
 Poppa, H. 192
 Porvik, G. L. 36, 81, 82, 111
 Post, D. 448
 Potschke, J. 340, 342, 343
 Prangnell, P. B. 74, 192, 309, 373–6, 379–83, 389, 401, 402, 406, 408, 409, 411–13, 432–4
 Prasad, S. V. 301, 346
 Pratt, R. 334
 Pratten, N. A. 441
 Predebon, J. C. 344
 Preston, M. E. 359
 Prewo, K. M. 24, 66, 221, 222, 223
 Protasov, E. N. 134, 136
 Purushothaman, S. 129
 Quenisset, J. M. 133, 158, 207, 324, 330, 332
 Rabenberg, L. 158
 Rabinovitch, M. 142, 344, 345
 Rack, H. J. 263, 347, 351
 Radcliffe, S. V. 269
 Rairden, J. R. 338
 Rajagopal, S. 322
 Randich, E. 206
 Rao, K. V. 291
 Rao, V. 444, 445, 446
 Rawal, S. P. 307, 374
 Ray, A. K. 307
 Ray, S. 340
 Reeves, A. J. 171, 191, 192, 195, 199, 202, 203, 262, 286, 287, 288, 446
 Regazzoni, G. 143
 Reiso, O. 351
 Reynolds, W. N. 404
 Rhodes, C. G. 192, 347
 Rice, J. R. 169, 239, 245, 246, 248
 Richer, J. P. 207
 Richmond, O. 82, 262, 265–70, 347, 409, 438–40
 Rickett, B. I. 265, 267, 268
 Ricks, R. A. 336
 Riek, R. G. 340
 Riley, W. C. 123
 Rippling, E. J. 409, 416
 Ritchie, R. O. 240, 241, 248, 261
 Rmili, M. 319, 321
 Roberts, A. C. 149, 150
 Roberts, K. A. 336
 Rocazella, M. A. 327
 Rocher, J. P. 207, 327, 330
 Roebuck, B. 408
 Rogge, V. 340, 342, 343
 Rohatgi, P. K. 301, 302, 307, 311, 312, 340, 343, 457, 459–61
 Ronald, T. M. F. 455, 458, 459
 Rosen, B. W. 20
 Rosenfield, A. R. 246, 248
 Rossi, J. L. 253
 Rossnagel, S. M. 205
 Rotsey, W. R. 153
 Roy, G. Le 234, 237, 241, 262
 Ruch, W. 71, 351
 Rühle, M. 169, 170, 175, 183
 Russ, S. M. 448
 Russel, K. C. 117, 373
 Ryum, N. 391, 430
 Sabatie, M. 323
 Saertre, T. O. 430
 Safoglu, R. 235
 Saint-Venant, B. 56
 Sakai, M. 158

- Sakamoto, A. 266
 Sakamoto, T. 469
 Sakaue, T. 469
 Sample, R. J. 323
 Samuels, L. E. 432
 Sanchez, J. 179
 Sanders, T. H. 383
 Sands, R. 403, 406
 Santarini, M. 323
 Sastry, S. M. L. 71, 84
 Sato, A. 303, 305
 Savrun, E. 359
 Saxena, M. 311, 312
 Sbaizero, O. 179
 Scala, E. 347
 Schamm, S. 207, 327
 Schapery, R. A. 122
 Schmanck, M. J. 418
 Schmidt, E. 3, 10
 Schmittgrund, G. D. 294
 Schober, T. 130
 Scholz, H. 327
 Schoonover, R. M. 441
 Schwab, P. M. 344
 Schwartz, H. 438
 Scott, V. D. 311, 358
 Scott, W. R. 403, 406
 Scruby, C. B. 236, 452
 Sedriks, A. J. 311
 Sellars, C. M. 127
 Sendeckyj, G. P. 438
 Sensmeier, M. 200, 253
 Shahani, R. A. 103, 129, 232, 236, 241, 258,
 260, 319, 347, 354, 376, 383–95,
 429–31
 Shang, J. K. 240, 241, 261
 Sharp, G. R. 158
 Shaw, M. 187
 Shepard, L. A. 129
 Sherby, O. D. 126, 129, 134, 147, 149, 154,
 155, 357, 376
 Shetty, D. K. 183, 184
 Shetty, H. R. 307
 Shewfelt, R. S. W. 94, 129
 Shi, N. 84, 86, 373, 374
 Shih, C. F. 170
 Shih, H. 312
 Shirayanagi, I. 358
 Shorshorov, M. K. 173
 Shyne, J. C. 129
 Siemers, P. A. 338
 Sigl, L. S. 180
 Simms, N. 310
 Sinclair, I. 255, 440
 Sinclair, W. D. J. 441
 Singh, J. P. 420
 Singh, R. N. 183
 Skibo, M. 338, 343
 Skolianos, S. 340
 Skyervold, S. 71
 Slepetz, J. M. 253
 Smelser, R. E. 179
 Smith, A. N. 56, 423, 425
 Smith, E. C. 303, 307
 Smith, G. 200
 Smith, G. C. 3, 11
 Smith, G. D. 35
 Smith, J. E. 191, 192, 199, 206, 209
 Smith, J. S. 406
 Smith, M. F. 336, 338
 Smith, P. 80, 81, 134, 194, 332
 Smith, P. R. 347
 Smith, R. W. 338
 Smolka, G. 344
 Solberg, J. K. 430
 Somehk, R. E. 206, 207, 210
 Sørensen, N. 140
 Spencer, A. 15
 Spencer, D. B. 338
 Spinner, S. 404, 405
 Spitzig, W. A. 262, 438, 439
 Sprissler, B. 346
 Spurling, R. A. 192, 347
 Stacey, G. T. 445
 Stacey, M. H. 322
 Stanford-Beale, C. A. 351, 353, 354
 Staniek, G. 344
 Stanley, D. R. 324
 Steckel, G. L. 416
 Stefanescu, D. M. 340, 342, 343
 Stephens, S. E. 358
 Stobbs, W. M. 77, 80, 97, 56, 57, 59, 64,
 74, 80, 87, 88, 93, 94, 100–5, 145, 171,
 191, 192, 195, 197, 199, 202, 231, 235,
 303, 305, 310, 373–6, 379–83, 387, 401,
 402, 406, 408–13, 416, 419, 420, 423,
 425, 438, 442
 Stohr, J. F. 142, 344, 345
 Stoloff, N. S. 344
 Stott, F. H. 308
 Stout, M. G. 81, 82, 111
 Strife, J. R. 129, 133
 Stringer, J. 310
 Stührke, W. F. 400, 406
 Stull, R. 191, 206
 Suery, M. 340, 343
 Sukanuma, K. 351, 358
 Suo, Z. 169, 179
 Suresh, S. 37, 38, 39, 73, 74, 86, 240, 252,
 255, 373, 381
 Sutcu, M. 183
 Suzuki, K. 303, 305
 Suzuki, M. 450, 451
 Suzuki, N. 351, 358
 Suzumura, A. 174
 Swanson, R. A. 416

- Sykes, E. C. 149
 Symes, W. R. 265, 266
 Szkopiak, Z. C. 86
- Takao, Y. 435
 Takehashi, H. 171
 Tanaka, K. 57, 59, 88, 235
 Tanata, A. 329
 Tao, S. 242
 Tar, J. Q. 253, 254
 Tardy, H. L. 424
 Tarrant, A. 462, 463, 464
 Tatelman, A. S. 452
 Taya, M. 30, 31, 77, 80, 100, 101, 118, 132,
 136, 139, 145, 146, 154, 158, 222, 264,
 280, 283, 286, 359, 371, 413, 416, 419,
 420, 435
 Taylor, G. I. 3, 10
 Taylor, M. D. 322
 Taylor, R. 203, 284, 286, 287, 288, 444
 Teft, W. E. 404, 405
 Telshow, K. 404, 406
 Temkin, D. E. 340, 342
 Teng, Y. H. 205
 Tenney, D. R. 448
 Termonia, Y. 36, 37
 Terranova, P. 406
 Thaw, C. 469
 Thomas, K. L. 480
 Thomas, D. G. 338
 Thomason, P. F. 237
 Thompson, A. W. 248, 256
 Thouless, M. D. 169
 Tien, J. K. 128, 129, 132
 Timoshenko, S. P. 67
 Titchmarsh, J. M. 431
 Toaz, M. W. 460
 Toitot, D. 145, 146, 149, 154
 Tombari, R. 468
 Tompkins, S. S. 122, 158, 448
 Touloukian, Y. S. 444
 Towata, S. 143
 Tozawa, Y. 158
 Tracey, D. M. 239
 Tressler, R. E. 206, 310
 Trozera, T. A. 129
 Trumper, R. L. 253, 358, 456, 459
 Trzaskoma, P. P. 310, 311, 312
 Tsai, S. D. 419, 420
 Tsai, S. W. 15, 227
 Tsangarakis, N. 253
 Tsuchiya, K. 264, 265
 Tsukamoto, H. 145, 149
 Tuler, F. R. 133
 Turner, S. 202
 Tvergaard, V. 37, 38, 39
 Tyrer, J. R. 359
 Tyson, W. R. 136
- Ueno, H. 143
 Uhlmann, D. R. 340, 342
 Umekawa, S. 143, 193, 204, 206
 Underwood, E. E. 439
 Upadhyaya, G. S. 301, 346
 Updike, C. A. 303, 305, 307
 Urakawa, S. 173
 Urquhart, A. W. 345
 Ushio, H. 466, 467
 Ustinov, L. M. 173
 Utsunomiya, S. 359
- Valentin, D. 149
 van Bueren, H. G. 445
 van Doren, V. 406
 van Hille, D. 438, 439
 van Schoor, M. C. 307
 Vanherle, G. 406
 Varshavsky, A. 305
 Vasudevan, A. K. 82, 265, 266, 267, 269,
 270, 383, 409
 Vecchio, K. S. 263
 Vedani, M. 336
 Verk, A. S. 236
 Verma, S. K. 322
 Vernon, M. W. 277, 278, 279, 289
 Verrall, R. A. 130
 Vescera, F. 175, 249
 Vincent, C. 207
 Vincent, H. 207
 Vincent, M. 436
 Vinogradov, L. V. 173
 Visanwadhani, R. K. 346
 Vizzini, A. J. 408, 409, 410
 Voeglesang, L. B. 456
 Vogelsang, M. 373
- Wadsworth, J. 133, 149, 154, 155
 Wagoner, R. H. 151, 152, 356, 357
 Wakashima, K. 136, 143, 145, 149, 193,
 204, 206, 413, 416
 Walker, A. M. 322
 Wallach, E. R. 358
 Walter, J. 404, 406
 Wang, A. G. 295–99, 416
 Wang, J.-S. 179
 Wang, L. 84
 Wang, S. S. 192
 Wann, R. J. 406
 Ward-Close, C. M. 347, 348, 349, 350
 Warchak, R. 193
 Warner, T. J. 64, 74, 102, 195, 197, 239,
 401, 402, 406, 438
 Warren, R. 193, 195, 324, 330, 332, 438,
 439

Author index

497

- Warwick, C. M. 30, 31, 33, 80, 81, 120,
 134, 145–6, 158, 191–2, 194, 199, 207,
 210, 332, 420, 441–6
- Watanabe, K. 158
- Waterman, T. E. 278, 279, 289
- Watson, M. C. 171, 180, 184, 186, 188,
 196, 198, 200, 426
- Watts, J. F. 194, 324, 332
- Wawner, F. E. 192, 204, 207, 343, 347
- Webster, D. 66
- Webster, P. 419
- Weertman, J. R. 125, 264, 265
- Weeton, J. W. 480, 406
- Wei, K. T. 191–2
- Wei, W. 309
- Weih, T. P. 183
- Weiland, H. 430
- Weiss, H. J. 305
- West, E. G. 278, 279, 289
- Westfall, L. J. 338
- Wheatley, W. J. 192, 347
- White, D. R. 327, 345
- White, J. 336
- Whitehouse, A. F. 194, 232, 236, 238, 239,
 241, 258, 260, 319, 347, 441, 442, 444,
 445, 446
- Whittenberger, J. D. 346
- Whittle, D. P. 310
- Wienecke, H. A. 39
- Wilder, D. R. 206
- Wilkinson, S. J. 404
- Wilks, T. E. 257
- Williams, D. R. 255, 256, 257, 422, 426
- Williams, R. K. 445
- Willis, T. C. 334, 335, 336
- Wilson, D. V. 414, 420
- Windsor, C. G. 419, 420
- Wirth, G. 344
- Withers, P. J. 56, 57, 59, 64, 77, 80, 97, 80,
 89, 92, 102, 145, 194, 231, 383, 408,
 409, 411–6, 419, 420, 422–6, 435–7,
 438, 442, 482
- Wolf, E. E. 123
- Wolfenden, A. 303, 306, 403, 406
- Wolfenstine, J. 134
- Wolff, E. G. 143, 448
- Wolla, J. M. 303, 306
- Wood, J. V. 334
- Wooley, R. L. 413
- Wright, M. A. 158
- Wright, P. K. 199, 253
- Wu, M. Y. 147, 149, 154, 155, 357
- Wunderlin, R. 296
- Xia, K. 133, 319
- Xiong, Z. 133
- Yakoub, M. M. 330
- Yamada, M. 158, 358
- Yamada, S. 143
- Yamatomo, J. 193, 204, 206
- Yang, C. J. 183, 188, 190, 195
- Yang, J. M. 183, 188, 190, 195
- Yao, C. K. 133
- Yarandi, F. M. 343
- Yatomatsu, Y. 329
- Yau, S. S. 256, 259
- Yegneswaren, A. H. 311, 312
- Yoneda, N. 353
- Yoshida, M. 204, 350
- Yoshizawa, H. 156
- Young, A. G. 153
- Young, R. D. 262, 347, 438, 439, 440
- Young, R. J. 324, 332
- Young, R. M. K. 333
- Yu, W. 240, 241, 261
- Yuen, J. L. 294
- Zaat, J. H. 310, 336
- Zahl, D. B. 81
- Zantout, B. 330
- Zebrowski, D. 334
- Zemany, J. 468
- Zhang, H. 151, 152, 336, 338
- Zhang, Z. M. 191, 192
- Zhangbao, W. 175
- Zhao, D. 133
- Zhong, G. S. 158
- Zienkiewicz, O. C. 35, 38
- Zirlin, A. M. 173
- Zironi, E. P. 192
- Zok, F. 82, 265, 266, 267, 268, 269, 270,
 409
- Zweben, C. 468
- Zwicker, H. R. 345

Subject index

- abrasive flow machining, 359
- abrasive wear, 295
 - effect of particle size, 300
- accelerated aging, 379
- acoustic emission, 449
 - interpretation, 450
- acoustic signature, 450
- activation energy, 125
 - for interfacial reaction, 191
 - data, 133
- adaptive remeshing, 38
- adhesive bonding, 358
- adsorbed water, 301
- aero-engine applications, 470
- aging
 - accelerated, 379
 - effect on failure, 262
 - effect on fracture toughness, 263
 - kinetics, 378
 - measurement, 378
 - retarded, 381
- air entrainment, 329
- air escape paths, 329
- Al–Li
 - aging, 379
 - precipitation, 382
 - specific stiffness, 454
- Al–SiC
 - corrosion, 312
 - interfacial bond strength, 187
 - interfacial reaction, 193
 - oxidation, 309
- Al–Sn, wear of, 301
- Al 2124, precipitation in, 383
- alumina fibres
 - damping, 307
- aluminium, interfacial compatibility of, 193
- amplitude analysis
 - acoustic emission, 450
- amplitude of vibration, 303
- anelastic behaviour, 303
- anodic attack, 311
- anodizing, 430
- apparent Poisson's ratio, 171
- apparent stress exponent, 128
- applications, 454, 459
- applied loading
 - dislocations, 374
- araldite
 - photoelasticity, 423
- ARALL, 456
- Archard equation, 294
- Archimedean densitometry, 441
- Archimedes' principle, 441
- aspect ratio
 - critical, 30, 231
 - distribution, 435
 - optimum, 27
- asperity-induced closure, 252
- atomic peening
 - during PVD coating, 209
- average stress, 61
 - measurement of, 419
- axial yielding asymmetry, 71, 82
- axial failure
 - long fibre composites, 219
- B_4C fibre coatings, 206
- background heat flux, 282
- background stress, 59
- balance
 - of internal stress, 59
- banding, 352
 - characterisation of, 439
 - during extrusion, 349
- barrelling, 409
- barrier coatings, 205
 - stresses, 419
 - PVD fabrication, 348
- Bauschinger
 - strain, 413
 - testing, 410

- beryllium, 455
- biaxial stress, at a surface, 420
- bicycle frame, 465
- binder, 324
- blistering, 310
- bond strength, 178, 239, 261
 - implications, 166
 - wear, 294
- bounds
 - equal stress/strain, 14
 - on composite properties, 8
- Bragg equation, 418
- brake disc, 463
- Brazil nut test, 179
- brazing, 358
- buckling, 408, 412
- bulk modulus
 - slab model, 19
- cantilever, 303
 - beam test, 179
- case studies, 459
- cast irons
 - damping, 303
- casting
 - centrifugal, 341
 - reaction layer thickness, 193
- cathodic polarisation curves, 311
- cavitation, 231
 - stress, 167
- centrifugal casting, 341
- clip gauges, 408
- closure, 252, 261
- clustering
 - characterisation, 438
 - effect on crack path, 257, 262
 - effect on creep, 140
 - effect on recrystallisation, 393
 - effect on stiffness, 66
 - particles, 234
 - porosity, 351
- coatings
 - barriers to diffusion, 205
 - conductivity, 286
 - exothermic, 330
 - fibre, 202
 - of graded composition, 336
 - on SiC fibres, 193
 - protective, 310
 - wear resistant, 457
- coaxial cylinder model, 30
- convected coordinate
 - finite element model, 38
- Coble creep, 127
- COD, 245
- coefficient of sliding friction, 182, 294, 296, 301, 302
- compocasting, 336
- composite property map, 8
- composite strength
 - rule of mixtures, 173
- compression testing, 408
- computer program, 483
- conductivity, 444
 - electrical, 287
 - thermal, 277, 278
- constitutional undercooling, 340
- constrained strain ϵ^c , 47, 50
- constraint
 - Bauschinger testing, 412
 - compression testing, 409
 - during loading, 415
- continuously deforming model, 149
- continuum modelling of plastic flow, 86
- copper
 - interfacial compatibility, 194
- corrosion, 308
 - aqueous, 310
 - crevice, 311
 - galvanic, 311
 - gaseous, 310
 - pitting, 311, 312
- counts per event
 - acoustic emission, 450
- crack
 - deflection, 255
 - growth rate, 252
 - initiation, 256
 - path preference, 439
 - propagation, 257
- crack deflection
 - by interfaces, 175
 - energy for, 176
- crack growth rate, 252
- crack opening displacement δ , 236, 245
- crack path, 256
 - models, 246
- crack propagation, 183
- cracked particles, 231, 263
 - effect on ductility, 236
- cracking of fibre coatings, 206
- Crank–Nicolson
 - finite element model, 35
- creep, 4
 - Coble, 127
 - diffusional, 126
 - dispersion strengthened metals, 128
 - Eshelby model, 136
 - exponential, 127
 - finite element model, 138
 - long fibre composites, 140
 - metals, 123
 - MMCs, 130
 - models, 134
 - Nabarro–Herring, 127
 - power law, 125

500

Subject index

- creep (*cont.*)
 resistant applications, 456
 shear lag model, 136
 stress exponent, 140
 under thermal cycling, 141
- crevice corrosion, 311
- critical aspect ratio, 30
- critical growth velocity
 particle pushing, 338
- critical shear stress, 27
- critical stress values
 failure, 219
- critical temperature, photoelastic, 422
- cross-slip, 384
- crystallographic analysis
 fibre orientation, 437
- current density, 287
- cutting, 355, 428
- cutting and welding
 Eshelby model, 46
- CVD fibre coating, 202
- cylinder block, 467
- cylinder model, 30
- $D(x)$ tensor, 55
- damage
 acoustic evidence, 452
 on thermal cycling, 155
 particle cavitation/debonding, 231
 damage event detection, 449
 damage evolution, 240
 damage initiation, 257
 damage mechanisms, 230
- damage accumulation
 assessment by stiffness, 402
 stiffness, 401
 tension/compression asymmetries, 409
- damping, 304
 interfacial effects, 305
 log decrement, 305
 capacity, 302
- debonding, 231
 energy, 176
 shear stress, 168
 stress, 167, 180
- defects
 influence on fatigue, 253
- deformation texture, 385
- dendrites, 338, 340
- dendritic solidification, 330
- density
 related applications, 457
 measurement of, 441
- diamond
 conductivity, 278
 tooling, 356
- die infiltration, 324
- differential scanning calorimetry, 378
- differential thermal contraction
 effect on conductivity, 290
 effect on corrosion, 312
 interfacial sliding, 254
 stresses, 77
- diffraction
 peak broadening, 419
 stress measurement, 418
- diffusion, 101
 coefficient, 125
 interfacial, 101
 volume, 101
- diffusion barrier, 205
 coating, 348
 mechanics of, 206
 wetting promotion, 206
- diffusion bonding, 345, 355, 358
- diffusional creep, 126
- diffusional mean temperature, 147
- diffusivity, thermal, 279
- dilatometry, 447
 data, 145, 146
- dimensional stability, 461
- dimensionless wear coefficient, 302
- dimples, 248
- direct casting, 332
- directed metal oxidation, 343
- directional solidification of eutectics, 342
- Dirichlet tessellation, 262, 438
- disjoining force, 338
- dislocation
 climb, 125
 diffusion assisted climb, 102
 labelling, 373
 modelling plastic flow, 86
 nucleated precipitation, 379
 observation of, 373
 punching, 84, 100, 370
 relaxation, 100
 smearing, 88
 strengthening, 84
 structures, 370, 377
 tangles, 374
 TEM observation, 433
- dislocation density
 damping, 306
 effect on conductivity, 290
 measurement, 373
- dispersion strengthening, 3
- displacement maps, 46
- distribution of reinforcement, 438
- ΔK , 252
- drag pressure, 391
- drawing, 349, 351
- drive shaft, 461
- droplet velocities
 Osprey process, 335

Subject index

501

- thermal spraying, 336
- DSC, 378, 382
- dual phase steels, 4
- ductility
 - data, 240
 - effect of temperature, 265
 - models of, 236
- duplex fibre coatings, 209
- dynamic instability, 462

- effective diffusion temperature, 147
- effectively stress-free temperature, 117, 154
- efficiency of nucleation, 392
- elastic waves, 302
- electric field, 287
- electrical batteries, 457
- electrical conductivity, 277, 290
 - S tensor, 482
- electrical discharge machining, 356, 432
- electrical resistivity, 287
 - data, 289
- electrochemical machining, 356
- electron beam welding, 358
- electropolishing, 429, 432
 - conditions, 433, 434
- energy
 - of fracture, 243
 - strain energy, 96
- energy absorption
 - fracture toughness, 249
 - interface, 305
- engine block, 467
- enhanced creep model, 153
- enhanced plasticity creep model, 150
- environmental corrosion, 310
- environmental performance, 277
- environmental stability, 469
- equal strain model, 14
- equal stress bound, 14
- equivalence, 55
- equivalent homogeneous inclusion, 45, 49
- equivalent transformation strain ϵ^T , 60
- erosion, 295
- Eshelby method, 10, 44–6, 286
 - computer program, 483
 - conduction, 279
 - cycling creep model, 153
 - effect of inclusion shape, 55
 - stiffness predictions, 201
 - thermal model, 122
- Eshelby tensor, 481
 - conductivity, 281
 - stress, 47
- Eulerian
 - finite element model, 38
- eutectics, 318
 - fabrication of, 342
- exothermic reaction processes, 344
- expansion coefficient
 - composite, 120
 - matching, 469
- exponent for creep, 125
- exponential creep, 127
- extensometry, 447
- extrusion, 344, 349
 - banding, 349
 - die design, 351

- fabrication
 - diffusion bonding, 345
 - ion plating, 348
 - powder processing, 344
 - processes, 318
 - reactive processing, 342
 - slurry casting, 336
 - spray deposition, 334
 - sputter deposition, 348
 - summary of processes, 319
- failure, 218
 - axial, 219
 - criterion, 226
 - laminates, 228
 - long fibre composites, 218
 - mixed mode, 227
 - off-axis, 225
 - shear, 224
 - transverse, 220
- fastening, 358
- fatigue
 - effect of particle shape, 259
 - influence of defects, 253
 - limit, 252, 253
 - long fibre composites, 253
 - models, 251
 - piston application, 461
- fatigue failure
 - damping, 302
- fatigue resistance
 - cylinder block, 467
- fibre aspect ratio, 435
 - changes during extrusion, 349
- fibre breakage
 - acoustic emission, 451
- fibre coatings, 202
 - stress measurement, 420
- fibre end stress, 24
- fibre fracture, 29
 - during extrusion, 349
 - during wear, 300
- fibre–matrix interface
 - damping, 307
- fibre orientation
 - metallography, 427
 - measurement of, 436
- fibre protrusion/intrusion test, 187

- fibre pull-out, 196
 - fracture toughness, 249
 - energy, 176, 199
 - fibre push-out, 183, 195
 - fibre strength, 173
 - fibres
 - data, 480
 - inhalation hazard, 324
 - figure of merit, 7, 292
 - filament winding, 336
 - finite difference model, 34
 - finite element model, 34, 82
 - adaptive remeshing, 38
 - boundary conditions, 39
 - constraint, 39
 - Crank–Nicholson, 35
 - Lagrangian, 38
 - packing, 39
 - plastic straining, 111
 - push-out tests, 184
 - Rayleigh–Ritz, 36
 - weighted residual, 36
 - flake graphite, effect on wear, 301
 - flaws
 - effect on fracture, 243
 - flow behaviour
 - influence of pressure, 270
 - temperature variation, 4
 - fluid jet cutting, 359
 - forced vibration, 303
 - forest hardening, 93
 - forging, 351
 - four point bend test, 179
 - Fourier, transform analysis
 - fibre orientation, 437
 - fractography
 - fracture toughness model, 247
 - fracture, 218, 244
 - acoustic emission, 452
 - effect of strain rate, 264
 - fracture mechanics, 173
 - fracture surface, toughness relation, 248
 - fracture toughness, 245
 - crack path model, 246
 - effect of particle shape, 259
 - effect on thermal shock resistance, 292
 - effect of size, 261
 - effect on wear, 295
 - energy-based model, 251
 - fibre pull-out, 249
 - fractography model, 247
 - interfacial, 167, 169
 - models of, 242
 - free electrons, 287
 - heat flow, 278
 - free resonance, 405
 - frequency
 - effect on damping, 307
 - frequency analysis
 - acoustic emission, 450
 - friction stress, 371
 - friction welding, 358
 - frictional sliding, 168, 182, 185
 - energy absorption, 177
 - frozen stress photoelasticity, 422
 - fugitive binders, 323
 - full fragmentation test, 180, 187
 - Galerkin
 - finite element model, 36
 - galvanic corrosion, 311
 - gaseous corrosion, 310
 - gauge length profile, 410
 - Gaussian elimination
 - finite element model, 35
 - ghost composite, 55
 - energy of, 96
 - inclusion, 49, 52
 - thermal, 121
 - graded coatings, 336
 - grain boundary sliding
 - damping, 303
 - grain size
 - effect of reinforcement, 85
 - effect on strength, 85
 - heat flow effects, 330
 - grain structure
 - anodizing, 430
 - graphite, 312
 - damping, 307
 - grid maps, 46
 - Griffith equation, 243
 - grinding, 428
 - Gunier–Preston zones, 379, 381
- Hall–Petch relation, 85
 - Halpin–Tsai model, 15
 - hardness, 294
 - assessment of volume fraction, 438
 - measurements, 378
 - Harper–Dorn creep, 127
 - health hazards, 324
 - heat flow, 278
 - in melt, 329
 - heterogeneous nucleation, 379
 - HfO₂ fibre coatings, 205
 - high energy beam cutting, 357
 - high temperature applications, 470
 - high velocity oxy-fuel spraying, 336
 - homogeneous inclusion, 49
 - homogeneously nucleated precipitates, 382
 - hot isostatic pressing, 344, 351
 - hot pressing, 345
 - hybrid preform, 323
 - hydrogen
 - corrosion, 310

Subject index

503

- hydrogen sulphide
 - corrosion, 310
- hydrostatic stress, 101
 - effect on voiding, 236, 240
 - effect on voids, 232
- image stress, 59
- in situ* composites, 318
- in situ* fibre strength, 173
- in situ* matrix strength, 223
- inclusion
 - arrangement, 60
 - aspect ratio, 435
 - orientation, 436
 - shape effect on failure, 257
- inclusion shape
 - effect on yield stress, 71
- indirect casting, 333
- infiltration
 - of die, 324
 - pressureless, 327
 - viscous flow, 329
- inhalation hazard of fibres, 324
- inner ram
 - squeeze infiltration, 333
- insulating inclusions
 - electrical, 289
 - thermal, 287
- interaction
 - inclusion/inclusion, 60
- interface
 - bond strength, 166
 - chemistry, 190
 - diffusion data, 205
 - effect on performance, 171
 - energy absorption, 175, 305
 - fracture toughness, 169
 - keying, 195
 - reaction, 192
 - shear strength, 190
 - strain energy release rate, 167
- interface debonding, 231
 - acoustic emission, 452
 - effect on fatigue, 254
- interfacial bond strength
 - Al–SiC, 187
 - data, 188
 - effect of precipitation, 383
 - effect on wear, 297
 - Ti–SiC, 188
- interfacial compatibility
 - aluminium, 193
 - copper, 194
 - magnesium, 194
 - nickel, 193
 - titanium, 192
 - tungsten fibres, 193
- interfacial conductance, 286
- interfacial damage, 171
 - in Ti/SiC, 199
- interfacial damping, 307
- interfacial failure
 - acoustic emission, 451
 - crack growth, 257
- interfacial fracture toughness, 167
- interfacial precipitation, 383
- interfacial processes
 - energy absorption, 176
- interfacial reaction, 171
 - Al–SiC, 193
 - during casting, 341
 - during diffusion bonding, 345, 358
 - effect on conductivity, 287
 - effect on strength, 196
 - layer thickness, 191
 - property implications, 194
 - thermal cycling, 158
 - thermal resistance, 285
 - thermodynamics, 190
 - Ti composites, 345
 - transformation strain, 199
- interfacial reaction zone
 - effect on strength, 174
 - effect on toughness, 173
- interfacial resistance, electrical, 289
- interfacial sliding, 10
 - damping, 303
 - effect of coating, 209
- interfacial strength
 - debonding, 232
 - effect on ductility, 234
 - effect on failure, 261
- interfacial stress, critical, 167
- interfacial tests, 179
- interferometers
 - strain measurement, 447
- interlaminar shear stresses, 415
- intermetallics, I
 - fabrication, 344
- internal friction, 303
- internal necking, 237
- internal stress
 - balance, 59
 - driven superplasticity, 355
 - mean stress, 61
 - photoelasticity, 422
- interphase stresses, 419
- ion beam milling, 432
- ion plating
 - composite fabrication, 348
 - fibre coatings, 204
- ions, mobility of, 287
- Iosipescu test, 416
- isochromatics, 424
- isoclinics, 423
- isotherms, 280

504

Subject index

- joining, 355, 357
- K_{\max} , 252
- Lagrangian
 finite element model, 38
- Lamé equations, 67
- laminae
 failure, 218
- laminates
 failure of, 228
 sprayed, 336
- Lanxide Corporation, 328, 343
- laser assessment of strain, 409, 447
- laser cutting, 357
- laser flash technique, 444
- laser welding, 358
- linear viscous creep, 126
- liquid phase processing, 320
- load reversal, 410
- load sharing, 8
- load transfer, 5, 6, 7, 62, 171
- loaded composites, 51
- local stress fields
 effect of inclusion shape, 55
- local volume fraction, 439
- logarithmic decrement, 303
- long cracks, 251
- long fibre composites, failure of, 218
- long gauge length
 compression testing, 409
- loss factor, 304
- Lubanska correlation, 335
- lubricants, 301
 effect on wear, 295
- machining, 355
- macrohardness, 378
- macrosegregation
 squeeze infiltration, 332
- magnesium, interfacial compatibility of, 194
- materials selection, 8
- matrices
 Al 2000 series, 379, 383
 Al 7000 series, 383
 Al–Li, 382
- matrix
 oxidation, 308
 microstructure, 370
 properties, 223
 strengthening, 6
 stress field, 55
- matrix cracking
 acoustic emission, 451
- maximum stress theory, 226
- mean field approximation, 59
- mean free path, 278
- mean internal stress, 61
 effect of inclusion shape, 55
 evaluation, 411
 plastic, 89
- mechanical damping, 302
- mechanical test data, 71
- melt atomisation, 334
- melt entry, 325
- melt freezing, 331
- merit index, 8, 292
- mesh
 adaptive remeshing, 38
 generation, 36
 tessellation, 38
- metal, conductivity of, 278
- metallic wires, data on, 480
- metallography, 427
 damage nucleation, 236
- Mg–carbon, 307
- Mg–Li alloys
 interfacial compatibility, 194
- mica, damping, 307
- micro-damage
 acoustic emission, 450
- microelectronic packaging, 469
- microhardness, 378
- microplasticity, 73
 testing, 409
 Young's modulus, 401
- microporosity, 330
- microsegregation
 squeeze infiltration, 332
- microstructure
 effect on creep, 124
 effect on properties, 2
 role of fabrication, 330, 338
- micro-yielding, 28, 74
- mild wear, 295
- milling, 355
- misfit, relaxation of, 105
- misfit strain, 1045, 48
 applied loading, 54
 loading, 54
 thermal, 49, 52
- mismatch induced superplasticity, 355
- mixed mode, 170, 227
 loading, 408
 mixity, 170
- modified shear lag model, 24
- monofilaments
 data, 480
- morphology
 particles, 320
- multi-layer fibre coatings, 209
- multifilaments
 data, 480

Subject index

505

- Nabarro–Herring creep, 127
 neutron diffraction, 419
 thermal strains, 145
 nickel
 interfacial compatibility, 193
 oxidation, 308
 thermal shock, 292
 aluminide, 344
 nodal points, 35
 noise, damping, 302
 nomenclature, 474
 non-destructive testing
 acoustic emission, 450
 diffraction, 418
 non-dilute composites, 57
 nucleation
 efficiency, 392
 strain for voiding, 234
 voids, 231
- off-axis loading, 225, 414
 Ohm's law, 287
 optical strain measurement methods, 447
 ordering
 damping, 303
 orientation
 fibre, 436
 Orowan
 loops, 88, 383, 411
 strengthening, 5, 86, 383
 Osprey process, 334
 hydrodynamic instabilities, 336
 oxidation, 308
 Al–SiC, 309
 effect on wear, 295
 Ti–SiC monofilament, 309
 void formation, 310
 oxide film formation
 squeeze infiltration, 330
 oxide particles
 boundary mobility, 392
 in Al composites, 345
 oxygen ingress, 309
- packaging, microelectronic, 469
 Paris law, 252
 particle
 aspect ratio, 435
 clustering, 234
 cracking, 231, 242
 pushing, 336, 338
 segregation, 338
 particle agglomeration, in casting, 338
 particle content, effect on texture, 395
 particle morphology, 320
 processing considerations, 318
 particle pushing, 336, 338
 critical velocity, 338
 size effect, 341
 particle size, effect on texture, 395
 particle stimulated nucleation, 391
 particles
 data, 479
 effect on recrystallisation, 388
 particulate composites
 yielding, 82
 penetration depth, 418
 permanent softening, 411
 phase angle, 168, 170
 phonons
 heat flow, 278
 scattering, 445
 velocity, 278
 photoelastic studies, 45, 56, 422
 push-out tests, 184
 physical vapour deposition
 fibre coatings, 204
 picture frame test, 414
 pin-on-disc experiments, 297
 pinning pressure, 391
 piston, 460
 pitting corrosion, 312
 pitting potential, 312
 plasma spraying, 336
 plasma-sprayed coatings, 310
 plastic deformation, 71
 plastic relaxation, 100
 thermal stress, 371
 plastic strain, 89
 acoustic emission, 451
 measurement, 407
 plastic zone, 245
 energy of, 251
 fatigue, 254
 platelets
 processing considerations, 319
 plating
 fibre coatings, 204
 ploughing, 297
 Poisson contraction
 slab model, 17
 induced cracking, 229
 Poisson's ratio
 apparent, 171
 changes during loading, 171
 polarisation curves, 311
 polished sections, 428
 fibre orientation, 436
 porosity
 assessment, 441
 effect on conductivity, 285
 matrix smearing, 442
 metallography, 428
 Osprey process, 336

- porosity (*cont.*)
 removal by HIPing, 351
 thermal spraying, 336
 ultrasonic determination, 404
- potential energy, 96
- powder blending, 344
 effect of particle size, 345
- powder processes, 344
- power law creep, 125
- precipitate-free zone, 383
 effect on failure, 263
 precipitation
 behaviour, 378
 hardening, 3
 nucleation, 379, 381
- preform, 322
 fabrication, 322
 hybrid, 323
- pressure
 effect on fracture, 265
 die-casting, 336
- pressureless infiltration, 327
- prestrain, 411
- principal stresses
 determination, 422
 photoelasticity, 423
- prismatic punching, 101, 370, 374
- proportional limit, 28, 63
 absence of, 74
 Young's modulus, 400
- protective coatings, 206
- pull-out energy, 176
- pull-out test, 179, 180
- punching distance, 101
- push-out test, 179, 183
- pushing of particles, 336
- PVD, 346
 fibre coatings, 204
- pycnometry, 441
- quality factor, 304, 306
- R* ratio, 252
- radiograph, 350
- rail shear test, 414
- random distribution, 60
- ratchetting, 145
- rate constant
 interfacial reaction, 192
- reaction layer, 234
 conductivity, 285
 thickness, 191
- reactive processing, 327
- recovery processes, 383
- recrystallisation, 103
 effect of clusters, 393
 effect on creep, 127
 effect of oxide particles, 392
 effect of particles, 388
 textures, 394
- reinforcement
 alignment, 427, 436
 cracking, 231
 data, 479
 distribution, 178, 262, 427, 438
 oxidation, 310
- reinforcement content
 ultrasonic assessment, 404
- reinforcement cracking
 acoustic emission, 452
- reinforcement distribution, 178, 438
 effect on failure, 262
 metallography, 427
- reinforcement shape
 effect on failure, 257
- reinforcement size
 effect on failure, 259
 effect on wear, 296
- relaxation, 94
 creep, 139
 loaded, 97
 micromechanisms, 98
 surface, 420
 thermodynamics, 95
 unloading, 97
- relaxation time
 damping, 305
- repeatedly deforming model, 149
- residual thermal stress, 77
- resistivity, 444
 electrical, 287
- resonance
 damping, 302
 stiffness assessment, 405
- resonant frequency
 stiffness assessment, 403
- retardation of aging, 381
- Reuss model, 14
 conductivity, 283
- reverse plastic strain
 Bauschinger test, 413
- rheocasting, 336
- rolling, 351
- roughness-induced closure, 261
- rule of averages, 26
- rule of mixtures, 14, 26
 composite strength, 173
- S* tensor, 47, 481
 electrical conduction, 482
 thermal conduction, 482
- S/N* curves, 252, 253
- 'Saffil®', 322
 wear, 297
 interfacial reaction, 194
- Saint Venants principle, 56

Subject index

507

- saline corrosion, 310
 scattered light photoelasticity, 422
 scattering of electrons, 289
 Schapery model, 122
 sectioning, 428
 segregation
 of particles, 338
 selective reinforcement, 460
 severe wear, 295
 shakedown stress, 253
 shape of reinforcement, 265
 effect on failure, 257
 shear
 debonding stress, 168
 bands, 266
 failure, 224
 shear deformation
 acoustic emission, 451
 shear lag model, 20
 estimate of pull-out, 177
 model of pull-out test, 180
 modified, 24
 push-out, 184
 shear modulus
 slab model, 15
 shear stress
 concentration factor, 225
 contours, 422
 shear testing, 414
 shear velocities
 stiffness assessment, 402
 sheet forming, 355
 shock resistance, 291
 shrinkage during solidification,
 333
 SiC, conductivity of, 278
 silica binder, 324
 silver-graphite
 wear, 301
 single fibre pull-out, 180
 size of reinforcement
 effect on failure, 259
 slab model, 12
 sliding wear, 294
 slurry casting, 336
 sol-gel precipitation
 fibre coatings, 204
 solidification, 329
 sound velocity, 402
 source shortening, 93
 spallation of fibre coatings, 207
 spark erosion, 356
 spatial discretisation, 34
 specific damping capacity, 304
 specific heat, 278
 specific stiffness, 454
 drive shaft, 462
 instrument rack, 463
 specimen preparation, TEM, 431
 spherical particles
 processing considerations, 319
 spinel, 310
 spray deposition, 334
 reaction layer, 190
 sputter deposition
 composite fabrication, 348
 fibre coatings, 204
 squeeze casting, 322
 piston, 460
 squeeze infiltration, 322, 325
 segregation, 332
 stable crack propagation, 183
 stacking fault energy, 101, 384
 stiffness
 applications, 454
 axial, 12
 effect of clustering, 66
 predictions, 62
 simple expression, 68
 transverse, 14
 stored energy
 deformation zones, 388
 recrystallisation, 394
 strain amplitude, 307
 strain energy, 96
 strain energy release rate, 243
 strain gauges, 408, 447
 atomic, 419
 strain localisation, 248
 strain measurement, 447
 strain ratchetting, 145
 strain rate
 effect on failure, 264
 strain rate sensitivity, 355
 strength applications, 456
 strengthening mechanisms, 2, 6
 stress
 interphase, 419
 stress corrosion cracking, 256
 acoustic emission, 452
 stress exponent, 125
 creep, 140
 data, 133
 stress-free temperature, 117, 154
 stress measurement by diffraction, 418
 stress relaxation, 10
 creep, 139
 stress separation, 425
 stress trajectories, 424
 stress-free misfit, 47, 52
 stress/strain behaviour
 effect of pressure, 270
 structure/property relationships, 2
 struts, 467
 subscripts, 476
 superalloys, thermal shock of, 294

508

Subject index

- superplastic forming, 355
- superplasticity
 - thermal cycling, 151, 355
- superscripts, 477
- surface blistering, 310
- surface relaxation, 420
- surface relief, 432
 - metallographic preparation, 428
- surface temperature
 - wear, 301
- surface treatment
 - wear resistance, 457
- symbols, 474

- Tardy method, 424
- Taylor series expansions, 35
- TEM specimen preparation, 431
- tensile strength
 - effect of reaction layer, 196
- tensile testing, 408
- tensile yielding asymmetry, 71, 77
- tension/compression, 410
 - testing considerations, 409
- tensioned push-out test, 180
- tessellations, 438
 - finite element model, 38
- texture
 - anodizing, 430
 - deformation-induced, 385
 - recrystallisation, 394
- thermal conductance, 285
- thermal gradient, 280
- thermal conductivity, 7, 277, 278
 - data, 279
 - effect of boundaries, 445
 - effect on particle pushing, 341
 - measurement, 443
 - microelectronic substrates, 469
 - piston component, 460
 - S tensor, 482
- thermal contraction stresses, 169
- thermal cycling, 355
 - damage, 155
 - dimensional changes, 145
 - creep, 141
 - long fibre composites, 143
 - short fibre composites, 145
 - superplasticity, 149
 - thermal shock, 294
 - under load, 147
- thermal diffusivity, 279
 - measurement, 444
- thermal distortion, 8
- thermal excursion, 150
- thermal expansion, 7, 120
 - effect of pores, 121
 - matching, 458, 469
 - related applications, 458
 - ultra-low, 459
- thermal gradient, 278
- thermal misfit stresses, 48, 77, 117, 143, 145
 - dislocations, 370
 - effect on tension/compression, 413
- thermal shock resistance, 277, 291
 - data, 293
- thermal spraying, 336
- thermal strains, 52
- thermophysical interactions, 8
- three-dimensional photoelasticity, 422
- three-body abrasion, 295
- threshold
 - for particle cracking, 452
 - stress, 128, 132
- Ti
 - aluminides, 344
 - composites fabrication by PVD, 346
 - conductivity, 278
 - dissolution of surface oxide, 345
 - interfacial compatibility, 192
 - thermal shock, 292
- Ti–SiC
 - conductivity, 283
 - interfacial bond strength, 188
 - oxidation, 309
- TiB₂ fibre coatings, 206
- torsional pendulum, 303
- transformation of inclusion
 - structural, 102
- transformation strain
 - ϵ^T , 45, 47, 49, 89
 - ϵ^T , 47, 49, 89
- transformation thermal gradient, 280, 282
- transient softening, 411
- transients
 - thermal cycling, 146
- transport properties, 277
- transverse loading
 - long fibre composites, 177
 - tensile failure, 220
- Tresca yield criterion, 75
- triaxial constraint, 178
- tribological behaviour, 294
- Tsai–Hill failure criterion, 227
- tube torsion, 414
- tungsten fibre
 - damping, 307
 - thermal shock, 294
- turbine blades, 470
- two-body abrasion, 295

- ultra-low expansivity, 459
- ultrasonic modulus assessment, 402
- uniform plastic flow, 88
- uniform stress, 46

Subject index

509

- vacancy-related precipitation, 381
 vapour deposition, 346
 variational methods
 finite element models, 36
 velocity of sound
 stiffness assessment, 402
 vibration
 damping, 302
 energy of, 303
 viscosity
 in slurry casting, 338
 viscous drag force
 particle pushing, 338
 viscous flow
 infiltration, 329
 void, 231
 coalescence, 237
 effect of pressure, 265
 growth, 239, 241
 nucleation strain, 234
 Voigt model, 14
 conductivity, 282
 volume fraction
 ultrasonic assessment, 403
- water, effect on wear, 301
 weakening of texture, 395
 wear
 coefficient, 294, 302
 fibre fracture, 300
 hard reinforcement, 296
 mechanism maps, 295
 reinforcement shape effect, 296
 soft reinforcement, 301
 surface temperature, 301
 wear resistance, 294
 applications, 457
 brake disc, 463
 Weber number, 335
 weighted residual, 36
 wetting, 204, 327
 during casting, 338
- whisker composites
 squeeze infiltration, 324
 whiskers
 aspect ratio, 435
 health hazards, 324
 data, 479
 work-hardening
 combining terms, 94
 forest hardening, 93
 inherent matrix, 92
 linear, 92
 microstructural, 92
 non-linear, 103
 source shortening, 93
 work of fracture, 196, 200
- X-ray photoelectron spectroscopy, 195
 X-ray radiograph, 350
 X-ray diffraction, 419
 'XD' process, 346
- Y_2O_3 fibre coatings, 205
 Y/ Y_2O_3 fibre coatings, 209
 yield stress
 effect of volume fraction, 71
 in situ, 84
 yielding
 criterion, 75
 effect of grain size, 85
 global, 74
 matrix microstructure, 84
 particulate composites, 82
 yielding asymmetry
 axial/transverse, 71, 82
 tension/compression, 71, 77
 Young's modulus
 axial, 12
 experimental values, 63
 measurement, 74, 399
 shear lag model, 26
 transverse, 14
- Zener pinning, 129, 388
 ZrO₂ fibre coatings, 205