

Cambridge University Press

978-1-107-41356-6 - In Situ Process Diagnostics and Intelligent Materials Processing

Edited by Peter A. Rosenthal, Walter M. Duncan and John A. Woollam

Index

[More information](#)

## AUTHOR INDEX

- Ahmed, H., 83  
 An, Ilsin, 23  
 Anderson, L.W., 275  
  
 Bardwell, J.A., 59  
 Barlett, D., 249  
 Barty, C.P.J., 77  
 Beasley, M.R., 193  
 Bell, David C., 281  
 Biggers, R., 215  
 Bilello, J.C., 163  
 Blank, Dave H.A., 209, 237, 255  
 Bonanno, A.S., 15  
 Bozovic, Ivan, 221  
 Bozovic, Natasha, 221  
 Bungay, C.L., 177  
 Busbee, J., 215  
  
 Chambers, J.J., 41, 157  
 Charpenay, S., 15  
 Chen, P., 47, 71  
 Chow, D., 3  
 Collins, R.W., 23  
 Cosgrove, J.E., 15  
 Cozzi, S., 65  
  
 Dempsey, D., 215  
 DeVries, M.J., 177  
 Doctor, D., 3  
 Dörner, R., 171  
 Dubourdieu, C., 89  
 Durning, Christopher J., 145  
 Dworak, B.J., 177  
  
 Eckstein, J.N., 221  
 Elliott, K., 3  
  
 Fähler, Sebastian, 139  
 Fejer, M.M., 193  
 Ferguson, I., 3  
 Fiory, A.T., 105  
  
 Gallois, B., 89  
 Gao, N., 133  
 Gibson, W.M., 133  
 Goyette, A.N., 275  
 Gruen, D.M., 275  
 Guo, T., 77  
 Guo, X., 53  
  
 Hale, J., 3  
 Hammond, R.H., 193  
 Hauser, J.R., 41, 157  
 Heitz, R., 71  
 Hershberger, J., 163  
 Herzinger, C., 3  
 Hofmann, F.A., 133  
  
 Jagutzki, O., 171  
 Janz, S., 59  
 Jimenez, R.X., 77  
 Johnson, S., 3  
 Johns, B., 3  
 Jones, J., 215  
  
 Kelly, James J., 145  
 Khan, T., 47  
 Kim, G.Y., 89  
 Kinsella, K.K., 15  
 Kobayashi, Naoki, 35  
 Kobayashi, Yasuyuki, 35  
 Koinuma, H., 227  
 Kosel, P.B., 263  
 Koster, Gertjan, 209, 255  
 Krauss, A.R., 275  
 Krebs, Hans-Ulrich, 139  
 Kung, P.J., 15  
 Kuo, C.H., 3  
  
 Lanter, W., 263  
 Larciprete, R., 65  
 Lawler, J.E., 275  
 Lee, G.H., 227  
 Lee, Joungchel, 23  
 Lee, S.M., 133  
 Liptak, D., 215  
 Liu, K.S., 53  
 Lu, Z., 249  
  
 Maartense, I., 215  
 MacDonald, C.A., 133  
 Madhukar, A., 47, 71  
 Maruta, H., 227  
 Mast, D., 215  
 Matijasevic, V.C., 249  
 McCauley, T.G., 275  
 Mergel, V., 171  
 Metz, W., 127  
 Meyer, J.D., 89  
 Min, K., 41, 157  
 Miyoshi, K., 263  
 Monreal, R., 263  
 Murray, T., 215  
  
 Naito, M., 203  
  
 O'Donnell, J., 221  
 Ohnishi, T., 227  
 Olson, G., 3  
 Owens, S.M., 133  
  
 Padeletti, G., 65  
 Palotás, Árpád B., 281  
 Parent, T., 71  
 Parsons, G.N., 41, 157

Cambridge University Press

978-1-107-41356-6 - In Situ Process Diagnostics and Intelligent Materials Processing

Edited by Peter A. Rosenthal, Walter M. Duncan and John A. Woollam

Index

[More information](#)

- Pearsall, T.P., 117  
Pelczynski, M., 3  
Peterson, T.L., 215  
Pieretti, S., 65
- Rainey, Lenore C., 281  
Raoux, S., 53  
Rek, Z.U., 163  
Ressler, T., 127  
Rijnders, Guus J.H.M., 209, 255  
Rogalla, Horst, 209, 237, 255  
Rogne, H., 83  
Rosenthal, P.A., 15  
Rose-Petruck, C., 77  
Roth, John A., 3, 97  
Rovira, P.I., 23
- Sasaki, K., 227  
Sato, H., 203  
Sausa, R.C., 187  
Schmidt-Böcking, H., 171  
Sengupta, S., 187  
Shahedipour, F., 269  
Silvetti, D., 53  
Small, A., 47  
Solomon, P.R., 15  
Spielberger, L., 171  
Squier, J.A., 77
- Takiguchi, Hiroshi, 151  
Tanigaki, Nobutaka, 151  
Taylor, C., 249
- Timans, P.J., 83  
Tiwald, T.E., 177
- Ullmann-Pfleger, K., 171
- VanderSande, John B., 281  
Varanasi, C., 215  
Venizelos, D.T., 187  
Viswanathan, R., 47  
von Dessonneck, K., 249
- Walker, B.C., 77  
Wang, C., 47  
Wang, Weizhi, 193  
Weisheit, Martin, 139  
West, Alan C., 145  
White, H.W., 269  
Wilson, K.R., 77  
Wong, Joe, 127  
Woollam, John A., 177  
Wu, R.L.C., 263
- Yamamoto, H., 203  
Yan, Z., 47  
Yase, Kiyoshi, 151  
Yoshida, Yuji, 151  
Yoshimoto, M., 227
- Zhang, W., 15  
Zhao, Z.B., 163  
Zhou, D., 275  
Zhu, S., 269

Cambridge University Press

978-1-107-41356-6 - In Situ Process Diagnostics and Intelligent Materials Processing

Edited by Peter A. Rosenthal, Walter M. Duncan and John A. Woollam

Index

[More information](#)

## SUBJECT INDEX

- a axis, 221
- absorbed species, 269
- absorption, 83
  - spectroscopy, 275
- ALL-MBE, 221
- anelasticity, 163
- anodic oxide, 59
- atomic
  - absorption spectroscopy, 193
  - flux, 193
  - force microscopy (AFM), 255
    - analysis, 65
  - oxygen, 177
- barium strontium titanium oxide, 187
- bicrystals, 163
- C<sub>2</sub>, 275
- CCD cameras, 171
- chemical composition, 117
- closed-loop control, 105
- coaxial impact collision ion-scattering spectroscopy (CAICISS), 227
- collimating optic, 133
- complex oxides, 209
- control, 23
  - algorithms, 105
- copper, 145
- current distribution, 145
- CVD growth, 65
- deformation of materials, 163
- degree of polarization, 23
- diamond, 269
  - thin-film growth, 23
- diamondlike-carbon films, 263
- DyBa<sub>2</sub>Cu<sub>3</sub>O<sub>7</sub>, 221
- dynamics, 77
- ECR-PACVD, 269
- electrochemical quartz-crystal microbalance (EQCM), 145
- electrodeposition, 145
- electron energy loss spectroscopy (EELS), 281
- ellipsometry, 65
- emission, 83
  - spectra, 215
  - spectroscopy, 187
- emissivity, 97
- end-point, 41
  - detection, 157
- energy-dispersive X-ray absorption spectroscopy (EDXAS), 127
- analysis (EDX), 281
- etch, 41
- ex situ* spectroscopic ellipsometry, 177
- Fe/Ag multilayers, 139
- GaN, 35
- grazing
  - incidence x-ray diffraction, 151
  - incident, 269
- growth
  - analysis, 227
  - rate, 89
- high(-)
  - density CF<sub>4</sub>+D<sub>2</sub> plasma, 157
  - speed imaging, 187
  - temperature
    - superconducting thin films, 249
  - superconductors, 203
- Hubble space telescope (HST), 177
- III-V compound semiconductors, 47
- implantation, 139
- in situ*, 15
  - and real time, 163
  - characterization, 151
  - diagnostic, 53
    - tools, 237
  - Fourier transform infrared reflection absorption spectroscopy (FTIRAS), 269
  - monitoring, 35, 221, 263
  - reflection high-energy electron diffraction (RHEED), 227
  - sensors, 105
  - spectroscopic ellipsometry, 3, 71, 177
  - using reflection high-energy electron diffraction (RHEED), 209
- InGaAs, 3, 105
- InP, 83
- integrated-circuit fabrication, 117
- interface second-harmonic generation, 59
- International Space Station (ISS), 177
- ion(-)
  - beam
    - apparatus, 263
    - deposition, 263
  - scattering spectroscopy, 227
- IR, 83
  - ellipsometer, 177
  - spectroscopy, 15
- irradiation by KrF laser pulses, 65
- key processing parameters, 89
- La<sub>2</sub>CuO<sub>4+δ</sub> thin films, 203

Cambridge University Press

978-1-107-41356-6 - In Situ Process Diagnostics and Intelligent Materials Processing

Edited by Peter A. Rosenthal, Walter M. Duncan and John A. Woollam

Index

[More information](#)

- laser (-)
  - ablation, 215
  - material interactions, 77
  - MBE, 227
  - produced plasmas, 77
  - reflectance, 89
- $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  thin films, 203
- layer-by-layer growth, 227
- machine condition transfer function, 47
- mass
  - spectrometer, 157
  - spectroscopy, 41
- metalorganic chemical vapor deposition, 89
- modeling, 41
- molecular(-)
  - beam epitaxy, 47, 105
  - orientation, 151
- monitor *in situ*, 89
- monitoring, 23
- morphology, 151
- MOVPE, 35
- multichannel ellipsometer, 23
- N desorption, 35
- nanocrystalline diamond, 275
- nanometer-scale resolution, 89
- $\text{NdBa}_2\text{Cu}_3\text{O}_{7-x}$ , 215
- noninvasive process control, 117
- nonlinear optical frequency doubling, 193
- optical emission spectroscopy, 157
- organic
  - molecular-beam deposition, 151
  - thin films, 151
- oxide(s), 249
  - materials, 255
  - thin films, 227
- physical vapor deposition, 193
- plasma-enhanced chemical vapor deposition (PECVD), 23, 53
- polyarylene ether benzimidazole (PAEBI), 177
- polycapillary optics, 133
- position sensitive MCP detectors, 171
- process
  - control, 53
  - yield, 117
- pulsed laser deposition (PLD), 139, 187, 209, 255
- QEXAFS, 127
- quick-scanning x-ray absorption spectroscopy, 127
- radiation pyrometers, 97
- radio frequency (RF) impedance probes, 53
- rapid-thermal processes, 97
- real-time, 15
  - feedback control, 71
  - measurement, 23
  - monitoring, 3
- reflection high-energy electron diffraction (RHEED), 47, 139, 221, 237, 249, 255
- resistance measurements, 139
- ripple technique, 97
- rotating-compensator multichannel ellipsometry, 23
- RTD, 3
- scanning transmission electron microscopy (STEM), 281
- selective etch, 157
- semiconductor growth, 3
- sensor synergy, 105
- Si(001), 59
- SiGe alloys, 65
- simulations, 145
- solid-source delivery system, 89
- soot particulates, 281
- source identification, 281
- SPA, 35
- spacecraft materials, 177
- spectral-component monitoring, 215
- spectroscopic ellipsometry, 3, 237
- Stokes vector, 23
- strain effect, 203
- substrate
  - rotation, 249
  - temperature, 105
- temperature, 83, 97, 117
- thermal  $\text{Cl}_2$  etching, 71
- thin-film processes, 15
- three-dimensional momentum space imaging, 171
- time(-)
  - off-flight, 139
  - measurements, 171
  - resolved x-ray absorption spectroscopy, 127
- tunable diode lasers, 193
- ultrathin films, 203
- uniformity, 41
- UV, 177, 193
  - visible ellipsometer, 177
- XAS, 127
- x-ray
  - absorption spectroscopy, 127
  - diffraction, 77, 133
  - fluorescence, 133
  - optics, 133
  - topography, 163
- $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ , 237
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ , 209
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ , 215