

Book Editing

1. E. Zschech, C. Whelan, T. Mikolajick (Eds.)
"Materials for Information Technology – Devices, Interconnects and Packaging"
(508 p.)
Springer London (2005)
2. M. Baklanov, P. S. Ho, E. Zschech (Eds.)
"Advanced Interconnects for ULSI Technology"
(579 p.)
John Wiley & Sons, Chichester (2012)

Conference Proceedings Editing

1. E. Zschech, K. Maex, P. S. Ho, H. Kawasaki, T. Nakamura
"Stress-Induced Phenomena in Metallization"
(372 p.)
AIP Conf. Proc. 817, Melville, New York (2006)
2. S. Ogawa, P. S. Ho, E. Zschech
"Stress-Induced Phenomena in Metallization"
(204 p.)
AIP Conf. Proc. 945, Melville, New York (2007)
3. P. S. Ho, E. Zschech, S. Ogawa,
"Stress-Induced Phenomena in Metallization"
AIP Conf. Proc., Melville, New York (2009)
4. E. Zschech, P. S. Ho, S. Ogawa
"Stress-Induced Phenomena in Metallization"
(257 p.)
AIP Conf. Proc. 1300, Melville, New York (2010)
5. E. Zschech, R. Radojicic, V. Sukharev, L. Smith
"Stress Management for 3D ICs using Through Silicon Vias"
(173 p.)
AIP Conf. Proc. 1378, Melville, New York (2011)
6. P. S. Ho, C. K. Hu, M. Nakamoto, S. Ogawa, V. Sukharev, L. Smith, E. Zschech
"Stress-Induced Phenomena and Reliability in 3D Microelectronics"
AIP Conf. Proc. 1601, Melville, New York (2014)

Journal Editing

1. G. Petzow, F. Muecklich, E. Zschech (Guest Editor)
„Focused Ion Beams for TEM Sample Preparation“
Praktische Metallographie 40 (2003) 4

2. G. Petzow, F. Muecklich, E. Zschech (Guest Editor)
„Focused Ion Beams for TEM Sample Preparation“
Praktische Metallographie 41 (2004) 4
3. G. Petzow, F. Muecklich, E. Zschech (Guest Editor)
„Focused Ion Beams for TEM Sample Preparation“
Praktische Metallographie 42 (2005) 4
4. S. Mhaisalkar, Y. C. Yeo, N. Balasubramania, T. M. Lu, E. Zschech (Guest Editors)
„Materials for Advanced Technologies – Silicon Microelectronics: Processing to Packaging“
Thin Solid Films 504 (2006) 1 - 2
5. K. Maruszewski, E. Zschech (Guest Editors)
„Synthesis and Analysis of Nanomaterials and Nanostructures“
Mat. Sci. Poland 25 (2007) 1
6. S. E. Schulz, H. Koerner, E. Zschech (Guest Editors)
„Materials for Advanced Metallization“
Microelectronic Engineering 85 (2008) 10
7. E. Zschech, B. Michel (Guest Editors)
„Materials for Information Technology“
Advanced Engineering Materials 11 (2009) 4
8. P. S. Ho, E. Zschech, L. Smith, H. M. Tong (Guest Editors)
"Materials, Processing and Reliability of 3D Interconnects"
IEEE Transaction of Device, Materials and Reliability 12 (2012) 2
9. P. S. Ho, E. Zschech (Guest Editors)
"Stress Induced Phenomena in Metallizations"
IEEE Transaction of Device, Materials and Reliability 12 (2012) 4
10. E. Zschech (Guest Editor)
"Nanoanalysis"
Advanced Engineering Materials 16 (2014) 5
11. P. S. Ho, E. Zschech (Guest Editors)
"Stress Induced Phenomena in Metallizations"
IEEE Transaction of Device, Materials and Reliability 16 (2016) 4
12. E. Zschech (Guest Editor)
"Nanoanalysis"
Advanced Engineering Materials 20 (2018) 6
13. E. Zschech, R. Sinclair, R. Martins, M. Sebastiani, S. Sartori (Guest Editors)
"Characterization of Nanomaterials"
J. Nanomaterials (2019)

Book (Monography)

1. E. Zschech
"Bondkontakte. Metallphysikalische Prozesse in mikroelektronischen Drahtbondkontakten integrierter Schaltkreise"
(192 S.)
Akademie-Verlag Berlin (1990)

Book Chapters

1. E. Zschech, W. Blau
"EXAFS Investigation of Micro-Phase Decomposition in Metal-Metalloid Glasses", in
"Amorphous Structures - Methods and Results" (Ed. D. Schulze)
Akademie-Verlag Berlin, pp. 179-193 (1990)
2. E. Zschech
"Verbindungstechniken für elektronische Baugruppen - Grundlagen der Verbindungsbildung"
pp. 153-174
in "Baugruppentechologie der Elektronik - Montage" (Ed. W. Scheel)
Verlag Technik, Berlin (1. Auflage 1997, 2. Auflage 1999)
and
in „Electronics Assembly Technology“
Electrochemical Publ., Port Erin (1. Auflage 2003, 2. Auflage 2004)
3. E. Zschech
"Technische Zuverlässigkeit von stoffschlüssigen Verbindungen -
Werkstoffphysikalische Prozesse"
pp. 667-743
in "Baugruppentechologie der Elektronik - Montage" (Ed. W. Scheel)
Verlag Technik, Berlin (1. Auflage 1997, 2. Auflage 1999)
and
in „Electronics Assembly Technology“
Electrochemical Publ., Port Erin (1. Auflage 2003, 2. Auflage 2004)
4. R. Spolenak, E. Zschech
„Interconnects for Microelectronics“
in „Metal Based Thin Films for Electronics“ (Eds. K. Wetzig, C. M. Schneider)
Wiley-VCH, Berlin, pp. 7-24
(1. Auflage 2003, 2. Auflage 2005)
5. E. Zschech
„Barrier and Nucleation Layers for Interconnects“
in „Metal Based Thin Films for Electronics“ (Eds. K. Wetzig, C. M. Schneider)
Wiley-VCH, Berlin, pp. 222-234
(1. Auflage 2003, 2. Auflage 2005)

6. E. Zschech

„Device Related Aspects for Si-Based Electronics“

in „Metal Based Thin Films for Electronics“ (Eds. K. Wetzig, C. M. Schneider)

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(1. Auflage 2003, 2. Auflage 2005)

7. H. Stegmann, H. J. Engelmann, E. Zschech

„Transmission Electron Microscopy in Semiconductor Manufacturing“

in „Science, Technology and Education of Microscopy: An Overview“ (Ed. A.

Mendez-Vilas)

Formatex Press, Badjoz, pp. 187-199 (2003)

8. I. Zienert, H. Prinz, H. Geisler, E. Zschech

„Texture and Stress Study of Sub-Micron Copper Interconnect Lines using X-Ray Micro Diffraction“

in „Materials for Information Technology – Devices, Interconnects and Packaging“

(Eds. E. Zschech, C. Whelan, T. Mikolajick)

Springer London, pp. 241–250 (2005)

9. M. Hecker, R. Huebner, J. Acker, V. Hoffmann, N. Mattern, R. Ecke, S. E.

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10. M. A. Meyer, I. Zienert, E. Zschech

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11. J. U. Knickerbocker, L. W. Kong, S. Niese, A. Diebold, E. Zschech

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in „Advanced Interconnects for ULSI Technology“

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3. E. Zschech, W. Blau, H. Vega, K. Kleinstueck, S. Mager, M. A. Kozlov, M. A. Sheromov
"EXAFS and X-Ray Diffractational Investigation of the Heusler-Type Alloys Co_2MnSi and $\text{Fe}_{2.4}\text{Mn}_{0.6}\text{Al}$. Determination of the Ordering Probabilities"
phys. stat. sol. (a) 86, 117-124 (1984)
4. W. Blau, H. Steil, E. Zschech
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11. I. Geleji-Neubauer, E. Zschech

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Popular Scientific Papers

1. W. Blau, E. Zschech
"Synchrotronstrahlung - ein Werkzeug der Hochtechnologie"
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Invited Talks at Conferences

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6th National Synchrotron Radiation Conference of the USSR, Novosibirsk 1984
(Proc. pp. 226-230)
2. W. Blau, E. Zschech, J. Bergmann
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XV Conference on Applied Crystallography, Ciescyn 1992
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6. E. Zschech
"Metallkundliche Prozesse bei der Wärmebehandlung aushärtbarer
Aluminiumlegierungen"
51. Härtereikolloquium, Wiesbaden 1995
7. C. Weiss, H. Geisler, J. Lerche, E. Zschech, H. J. Engelmann
„Detection Limits and Application of TXRF for Contamination Control in
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10th Conf. on Solid State Analytics, Wien 1999
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"Novel Metrology Solution for Advanced Packaging Based on Multi-energy X-ray Microscopy and Tomography"
Int. Conf. Frontiers of Characterization and Metrology for Nanoelectronics, Monterey/CA 2017
(Proc.)
123. E. Zschech
"Relevance of Nanoanalysis for Process and Quality Control in Semiconductor Industry"
DGM Werkstoffwoche, Dresden 2017
124. E. Zschech
"Novel Approaches in X-ray Based Metrology and Failure Analysis for Advanced Packaging"
China International Semiconductor Executive Summit, Shanghai 2017
125. E. Zschech
"High-resolution 3D Imaging for Materials Science and Biomimetics"
Int. Silk Road and New Materials Scientific Conference, Wuhan 2017
126. E. Zschech, K. Kutukova, Y. Standke, J. Gluch, M. Gall
"Nondestructive 3D Imaging of Structures and Defects using Laboratory X-ray Tomography"
Int. Conf. on Reliability and Stress-related Phenomena in Nanoelectronics IRSP, Singapore 2018

127. K. Kutukova, Z. Liao, S. Werner, P. Guttmann, Y. Standke, J. Gluch, G. Schneider, E. Zschech
„In-situ X-ray Microscopy of Crack-Propagation to Study Fracture Mechanics of On-Chip Interconnect Structures“
MRS Spring Meeting, Phoenix/AZ 2018
128. E. Zschech, J. Gluch, K. Kutukova, P. Krueger, T. Weissgaerber, J. Wolf
“Perspectives of XCT for Nondestructive Studying of Metallic Micro and Nano Structures“
TMS TIME Conf., Heifa (2018)
129. E. Zschech, J. Gluch, K. Kutukova, P. Krueger, A. Clausner, W. Kunz, M. Loeffler, E. Topal, P. Rokicki, T. Weissgaerber, B. Kloeden, I. Zglobicka, A. Chmielewska
“High-resolution X-ray Computed Tomography at Materials and Products Manufactured using Conventional Processing Routes and Additive Manufacturing“
5th Int. Conf. of Engineering Against Failure ICEAF V, Chios (2018)
130. E. Zschech, S. Niese, K. Kutukova, J. Gluch
„High-resolution 3D Crack Visualization in Multi-component Materials and Structures during Mechanical Loading – A Novel Application of X-ray Microscopy“
YUCOMAT Conf, Herceg Novi (2018)
131. E. Zschech
„Impact of Stress on Performance and Reliability of Microelectronic Products“
European Conference on Residual Stresses ECRS 10, Leuven (2018)
132. E. Zschech, J. Gluch, K. Kutukova
“Application of X-ray Microscopy in Materials Science and Nanotechnology“
Int. Conf. Functional Materials and Nanotechnologies FMNT, Riga (2018)
133. E. Zschech
„Impact of Stress on Performance and Reliability of Microelectronic Products“
7th Int. Symp. on Transparent Conductive Materials TCM, Crete (2018)
134. E. Zschech
„Laboratory-based X-ray Microscopy and Nano X-ray Computed Tomography – Technique and Applications“
7th Int. School Smart Nanomaterials IWSN, Rostov-on-Don (2018)
135. E. Zschech, J. Gluch, K. Kutukova, J. Silomon
“Really Nondestructive High-resolution X-ray Computed Tomography for Advanced Packaging Applications“
Int. Conf. Frontiers of Characterization and Metrology for Nanoelectronics, Monterey/CA 2019
(Proc.)

136. E. Zschech, K. Kutukova, J. Silomon, J. Gluch, E. Topal, P. Krueger, M. Loeffler
"Perspectives of Laboratory X-ray Computed Tomography for High Resolution 3D Microstructure Analysis of Materials"
Materials – Materials for a Better World Congress, Lisbon 2019
137. K. Kutukova, J. Gluch, I. Zgłobicka, C. Sander, A. Clausner, E. Zschech
„In-situ Nano X-ray Tomography for High-Resolution Imaging of Cracks in Composites and Integrated Circuits during Mechanical Loading“
MRS Spring Meeting, Phoenix/AZ 2019
138. E. Zschech, K. Kutukova, J. Silomon, E. Topal, J. Gluch, M. Loeffler
„High-Resolution 3D Imaging of Structures and Defects in Advanced Interconnect and Packaging Structures Using Laboratory X-ray Tomography“
MRS Spring Meeting, Phoenix/AZ 2019
139. E. Zschech, J. Gluch, K. Kutukova, J. Silomon, E. Topal, I. Zglobicka
"Laboratory Nano X-ray Computed Tomography in Materials Science and Engineering"
Advanced Materials and Technologies AMT, Bukowina Tatrzańska 2019
140. E. Zschech
„X-ray Characterization of Morphology and Structure of Materials at Multiple Length Scales“
European Crystallography Meeting ECM, Vienna 2019
141. E. Zschech
"The Wonderful World of X-ray Imaging – Laboratory X-ray Microscopy in Materials Research and Innovation"
EUROMAT Conf., Stockholm 2019
(FEMS European Materials Gold Medal Award, Plenary talk)
142. E. Zschech
"Multi-scale X-ray Tomography at Electrocatalytic Systems for Water Splitting and Application of AI Algorithms"
DGM Werkstoffwoche, Dresden 2019
143. E. Zschech
„3D Visualization of Reliability-limiting Defects and Processes in Advanced Packaging and BEoL Stacks using X-ray Microscopy“
Int. Conf. on Reliability and Stress-Related Phenomena in Nanoelectronics IRSP 2019, San Jose/CA, 2019
144. E. Zschech, E. Topal, Z. Liao, J. Gluch, M. Loeffler, P. Guttmann, G. Schneider, J. Zhang, X. Feng
"Structure and Morphology of $\text{MoNi}_4/\text{MoO}_2@Ni$ Electrocatalytic Systems for Fast Water Dissociation"
Joint Polish-German Crystallographic Meeting, Wrocław 2020

145. E. Zschech, E. Topal, Z. Liao, J. Gluch, M. Loeffler, S. Werner, P. Guttmann, G. Schneider, J. Zhang, X. Feng
„Hierarchical Morphology and Atomic Structure of Electrocatalytic Systems for Fast Water Dissociation“
Workshop on Low-Dimensional Materials, Liblice 2020
146. E. Zschech, K. Kutukova, J. Silomon, J. Gluch
“High-resolution 3D Imaging of BEoL and Advanced Packaging Structures using X-ray Microscopy“
29th European Conference Materials for Advanced Metallization, Grenoble (web-based) 2020
147. E. Zschech, E. Topal, K. Kutukova, J. Gluch, M. Loeffler, S. Werner, P. Guttmann, G. Schneider, Z. Liao, J. Zhang, X. Feng
„Multi-scale X-ray Computed Tomography to Study the Morphology of Hierarchically Structured Electrocatalytic Systems for Fast Water Dissociation“
Workshop "Actual problems of condensed matter physics", Chernogolovka (web-based) 2020
148. E. Zschech, E. Topal, K. Kutukova, J. Gluch, M. Loeffler, S. Werner, P. Guttmann, G. Schneider, Z. Liao, J. Zhang, X. Feng
“Multi-scale Microscopy Study of 3D Morphology and Structure of $\text{MoNi}_4/\text{MoO}_2@Ni$ Electrocatalytic Systems for Fast Water Dissociation“
17th International Conference on Electron Microscopy, Cracov (web-based) 2020