

16th European Workshop on Modern Developments and Applications in Microbeam Analysis (EMAS 2019 Workshop)

IOP Conference Series: Materials Science and Engineering
Volume 891

Trondheim, Norway
19 - 23 May 2019

ISBN: 978-1-7138-2810-5
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2021)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| U-TH-PBTOTAL DATING OF REE-PHOSPHATE BY ELECTRON MICROPROBE: REVIEW AND PROGRESS | 1 |
| <i>J M Allaz, M J Jercinovic, M L Williams</i> | |
| PROCESSING AND INDEXING OF ELECTRON BACKSCATTER PATTERNS USING OPEN-SOURCE SOFTWARE..... | 23 |
| <i>H W Anes, J Hjelen, B E Sørensen, A T J van Helvoort, K Marthinsen</i> | |
| SI TRACEABLE CHARACTERISATION OF NANOMATERIALS BY X-RAY SPECTROMETRY | 32 |
| <i>B Beckhoff</i> | |
| MEASUREMENTS OF THE QUANTITATIVE ANALYTICAL DEPTH RESOLUTION AT EVAPORATED ALUMINIUM- AND SILVER-LAYERS WITH THE FEG-EPMA JEOL JXA-8530F..... | 42 |
| <i>D Berger, J Nissen</i> | |
| SPATIAL RESOLUTION LIMITS OF EPMA | 53 |
| <i>B Buse, S L Kearns</i> | |
| UPSCALING OF 2D MINERALOGICAL INFORMATION TO 3D VOLUMES FOR GEOSCIENCE APPLICATIONS USING A MULTI-SCALE, MULTI-MODAL AND MULTI-DIMENSIONAL APPROACH | 66 |
| <i>A R Butcher</i> | |
| QUANTIFYING PHASE TRANSFORMATION DURING THE MANUFACTURING PROCESS OF AISI 430 FERRITIC STAINLESS STEEL..... | 73 |
| <i>I Collado, A Núñez Galindo, A Ruiz, J F Almagro Bello, F J Botana</i> | |
| EXPLORING MARS AT THE NANOSCALE: APPLICATIONS OF TRANSMISSION ELECTRON MICROSCOPY AND ATOM PROBE TOMOGRAPHY IN PLANETARY EXPLORATION | 85 |
| <i>L Daly, M R Lee, P Bagot, J Halpin, W Smith, S Mcfadzean, A C O'Brien, S Griffin, L J Hallis, B E Cohen</i> | |
| A DICTIONARY INDEXING APPROACH FOR EBSD | 96 |
| <i>M De Graef</i> | |
| CLASSIFICATION AND CHARACTERISATION OF MAGMATIC-HYDROTHERMAL TOURMALINE BY COMBINING FIELD OBSERVATIONS AND MICROANALYTICAL TECHNIQUES | 107 |
| <i>K Drivenes, W Brownscombe, R B Larsen, R Seltmann, J Spratt, B E Sørensen</i> | |
| VERY LOW ENERGY PEAK SHIFTS IN EDS SPECTRA | 115 |
| <i>F Eggert, P P Camus, F Reinauer</i> | |
| IDENTIFICATION OF CU-CO-OXIDE PHASES OF REACTIVE AIR BRAZED BA0.5SR0.5CO0.8FE0.2O3-D-AG-14CUO JOINTS BY EBSD, EPMA AND TEM DIFFRACTION..... | 121 |
| <i>L C Ehle, S Richter, S Herzog, C Broeckmann, J Mayer</i> | |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| CHARACTERISATION OF SUPER DUPLEX STAINLESS STEEL BY OPTIMISATION OF EBSD PARAMETERS | 134 |
| <i>M Haukali, I Westermann, M Karlsen, Y Yu, R de Kloe, J Hjelen</i> | |
| THE MICROANALYSIS OF IRON AND SULPHUR OXIDATION STATES IN SILICATE GLASS - UNDERSTANDING THE EFFECTS OF BEAM DAMAGE..... | 143 |
| <i>E C Hughes, B Buse, S L Kearns, R A Brooker, D Di Genova, G Kilgour, H M Mader, J D Blundy</i> | |
| USING COMPLEMENTARY MICROANALYTICAL TECHNIQUES TO ANALYSE DIAMOND ANVIL CELL EXPERIMENTS | 158 |
| <i>E S Jennings</i> | |
| NEW HORIZONS IN QUANTITATIVE COMPOSITIONAL MAPPING – ANALYTICAL CONDITIONS AND DATA REDUCTION USING XMAPTOOLS..... | 172 |
| <i>P Lanari, F Piccoli</i> | |
| ANALYSIS OF OXIDE SCALES ON OXIDISED EN 1.4509 FERRITIC STAINLESS STEEL CATALYST SUPPORT BY SCANNING ELECTRON MICROSCOPY | 183 |
| <i>P Navarro Vicente, A Nuñez Galindo, J F Almagro Bello, J A Odriozola</i> | |
| ABOUT THE RELIABILITY OF EBSD MEASUREMENTS: DATA ENHANCEMENT..... | 192 |
| <i>G Nolze, A Winkelmann</i> | |
| EVOLUTION OF CRYSTALLINE ORIENTATIONS IN THE PRODUCTION OF FERRITIC STAINLESS STEEL | 205 |
| <i>A Nuñez Galindo, I Collado Garcia, D L Sales, J F Almagro Bello</i> | |
| DEVELOPMENT AND VALIDATION OF STANDARDLESS AND STANDARDS-BASED X-RAY MICROANALYSIS..... | 219 |
| <i>P T Pinard, A Protheroe, J Holland, S Burgess, P J Statham</i> | |
| RECENT FEATURES IN EBSD, INCLUDING NEW TRAPEZOIDAL CORRECTION FOR MULTI-MAPPING | 231 |
| <i>B E Sørensen, J Hjelen, H W Anes, T Breivik</i> | |
| RECENT DEVELOPMENTS IN SOFT X-RAY EMISSION SPECTROSCOPY MICROSCOPY..... | 240 |
| <i>M Terauchi, T Hatano, M Koike, A S Pirozhkov, H Sasai, T Nagano, M Takakura, T Murano</i> | |
| ADVANCES IN ELECTRON CHANNELLING CONTRAST IMAGING AND ELECTRON BACKSCATTER DIFFRACTION FOR IMAGING AND ANALYSIS OF STRUCTURAL DEFECTS IN THE SCANNING ELECTRON MICROSCOPE | 251 |
| <i>C Trager-Cowan, A Alasmari, W Avis, J Bruckbauer, P R Edwards, B Hourahine, S Krausel, G Kusch, B M Jablon, R Johnston</i> | |
| FISSION PRODUCT DISTRIBUTION IN IRRADIATED SAFETY-TESTED AND NON-SAFETY-TESTED AGR-2 TRISO PARTICLES | 261 |
| <i>K E Wright, I J van Rooyen</i> | |

Author Index