

Electron Microscopy and Analysis Group Conference (EMAG 2017)

Journal of Physics: Conference Series Volume 902

Manchester, United Kingdom
3 - 6 July 2017

Editor:

Caterina Ducati

ISBN: 978-1-5108-4993-8
ISSN: 1742-6588

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.

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

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

Volume 902

Electron Microscopy and Analysis Group Conference 2017 (EMAG2017)
3–6 July 2017, Manchester, UK

Accepted papers received: 15 September 2017
Published online: 16 October 2017

Preface

011001

OPEN ACCESS

[Electron Microscopy and Analysis Group Conference 2017 \(EMAG2017\)](#)

011002

OPEN ACCESS

[Peer review statement](#)

In-situ electron microscopy

012001

OPEN ACCESS

[Observation of thermally-induced magnetic relaxation in a magnetite grain using off-axis electron holography](#)

Trevor P. Almeida, Adrian R. Muxworthy, András Kovács, Wyn Williams and Rafal E. Dunin-Borkowski.....1

012002

OPEN ACCESS

[In-situ micro bend testing of SiC and the effects of Ga⁺ ion damage](#)

S Robertson, SS Doak, Z Zhou and H Wu.....5

012003

OPEN ACCESS

[In-situ irradiation of cerium precursors in TEM to study nanocrystal formation](#)

Muhammad Sajid Ali Asghar, Mohammed Mohammed Sabri, Zijian Tian and Günter Möbus.....9

012004

OPEN ACCESS

[Ceria-Water-Reactions Studied by Liquid Cell TEM](#)

Muhammad Sajid Ali Asghar, Beverley Inkson and Günter Möbus.....13

012005

OPEN ACCESS

[A Quantitative Evaluation of Electron Beam Sensitivity in Calcite Nanoparticles](#)

R W M Hooley, A P Brown, A N Kulak, F C Meldrum and R M D Brydson.....17

012006

OPEN ACCESS

[Cryo-STEM-EDX spectroscopy for the characterisation of nanoparticles in cell culture media](#)

M Ilett, F Bamiduro, O Matar, A Brown, R Brydson and N Hondow.....21

012007

OPEN ACCESS

[Kinetically controlled fabrication of gold nanorods and investigation of their thermal stability via in-situ TEM heating](#)

N. Chankhunthod, Z. Aslam, K. Critchley, S. D. Evans and R. Brydson.....25

012008

OPEN ACCESS

[Coalescence dynamics of size-selected gold clusters studied by time-resolved transmission electron microscopy](#)

J. Liu, D. Foster, Z.Y. Li, N. Wilkinson and J. Yuan.....29

012009

OPEN ACCESS

[Electron Beam Transformation of Glass Nanoparticles](#)

M. M. Sabri and G. Möbus.....33

012010

OPEN ACCESS

[Temperature dependence of electrical properties of electrodeposited Ni-based nanowires](#)

R Dost, D A Allwood and B J Inkson.....37

Technique Development

012011

OPEN ACCESS

[Measurement of Off-Axial Aberration](#)

Hidetaka Sawada and Angus I. Kirkland.....41

012012

OPEN ACCESS

[Accurate Evaluation of Aberration for Probe-Forming System and Influence of Aberration on High-Resolution STEM image](#)

Hidetaka Sawada, Fumio Hosokawa and Angus I. Kirkland.....45

012013

OPEN ACCESS

[StatSTEM: An efficient program for accurate and precise model-based quantification of atomic resolution electron microscopy images](#)

A De Backer, K H W van den Bos, W Van den Broek, J Sijbers and S Van Aert.....49

012014

OPEN ACCESS

[Imaging with the Super-resolution Microsphere Amplifying Lens \(SMAL\) Nanoscope](#)

Sorin Laurentiu Stanescu, Sébastien Vilain, Valerio Galieni, George Goh, Katarzyna Karpinska, Irina Barbolina, Alex Sheppard, Steve Wright, Wei Guo and Lin Li.....53

012015

OPEN ACCESS

[Optical ptychography with extended depth of field](#)

Peng Li and Andrew Maiden.....57

012016

OPEN ACCESS

[Quantification of Fe-oxidation state in mixed valence minerals: a geochemical application of EELS revisited](#)

A P Brown, S Hillier and R M D Brydson.....61

012017

OPEN ACCESS

[Characterization of a Miniature Electron Energy Analyzer for Scanning Electron Microscopes](#)

Ashish Suri, Andrew Pratt, Steve Tear, Christopher Walker and Mohamed El-Gomati.....65

012018

OPEN ACCESS

[Automated quantification of morphology and chemistry from STEM data of individual nanoparticles](#)

Y C Wang, T J A Slater, T S Rodrigues, P H C Camargo and S J Haigh.....69

012019

OPEN ACCESS

[High quality lamella preparation of gallium nitride compound semiconductor using Triple Beam™ system](#)

T Sato, K Nakano, H Matsumoto, S Torikawa, I Nakatani, M Kiyohara and T Isshiki.....73

012020

OPEN ACCESS

[Evaluating focused ion beam patterning for position-controlled nanowire growth using computer vision](#)

A B Mosberg, S Myklebost, D Ren, H Weman, B O Fimland and A T J van Helvoort.....77

EM Applications

012021

OPEN ACCESS

[Strategy for reliable strain measurement in InAs/GaAs materials from high-resolution Z-contrast STEM images](#)

Maryam Vatanparast, Per Erik Vullum, Magnus Nord, Jian-Min Zuo, Turid W. Reenaas and Randi Holmestad.....81

012022

OPEN ACCESS

[Precipitate statistics in an Al-Mg-Si-Cu alloy from scanning precession electron diffraction data](#)

J K Sunde, Ø Paulsen, S Wenner and R Holmestad.....85

012023

OPEN ACCESS

[Formation of Nanosized Lamellas of a Hardening Intermetallic Phase in the Powder Ni-based Coating Deposited by Microplasma Spraying on Steel Substrates](#)

D Alontseva, E Ghassemieh, A Russakova, A Dzhes and N Prokhorenkova.....89

012024

OPEN ACCESS

[A Hydrogenated Amorphous Silicon \(a-Si:H\) Thin Films for Heterojunction Solar Cells: Structural and Optical Properties](#)

Ayse Seyhan, Tolga Altan, Ömer Can Ecer and Recep Zan.....93

012025

OPEN ACCESS

[Fabrication and Characterisation of an Adaptable Plasmonic Nanorod Array for Solar Energy Conversion](#)

J Cottom, P Abellan, FS Hage, QM Ramasse, K Critchley and R Brydson.....97

012026

OPEN ACCESS

[Determination of the lateral size and thickness of solution-processed graphene flakes](#)

Li-Shang Lin, Wei Bin-Tay, Zabeada Aslam, A.V.K. Westwood and R. Brydson.....101

012027

OPEN ACCESS

[Eco-Friendly Synthesis and Characterization of Reduced Graphene Oxide](#)

D. Ickecan, R Zan and S. Nezir.....105

012028

OPEN ACCESS

[Imaging Two Dimensional Materials and their Heterostructures](#)

R Zan, Q M Ramasse, R Jalil, J-S Tu, U Bangert and K S Novoselov.....109

012029

OPEN ACCESS

[TEM-based Pair Distribution Function study of interatomic distances in C-supported Pt](#)

D T Tran and D Ozkaya.....113

012030

OPEN ACCESS

[Effect of TEM grid deposition method on the dispersion of thiol-stabilised silver nanoparticles](#)

Julie A Watts, Mike W Fay, Andrei N Khlobystov and Paul D Brown.....117

012031

OPEN ACCESS

[SEM tomography for the investigation of hybrid structures](#)

M Ferroni, M Donarelli, V Morandi, A Migliori, L Ortolani, A Signoroni, C R Chandraiahgari, G De Bellis and M S Sarto.....121

012032

OPEN ACCESS

[Armed conflict impacts on the microscale](#)

L Mol.....125