

# **International Materials Research Meeting in the Greater Region 2017**

Current Trends in the Characterisation of  
Materials and Surface Modification

IOP Conference Series: Materials Science and Engineering  
Volume 258

Saarbrücken, Germany  
6 – 7 April 2017

ISBN: 978-1-5108-5060-6  
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.**

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](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# Table of contents

## Volume 258

**International Materials Research Meeting in the Greater Region: "Current Trends in the Characterisation of Materials and Surface Modification"**

**6–7 April 2017, Saarland University, Saarbrücken, Germany**

**Published online: 26 October 2017**

### **Preface**

011001

OPEN ACCESS

[International Materials Research Meeting in the Greater Region: "Current Trends in the Characterisation of Materials and Surface Modification"](#)

011002

OPEN ACCESS

[Peer review statement](#)

### **Papers**

012001

OPEN ACCESS

[Correlation between the dielectric and the mechanical behavior of cellulose nanocomposites extracted from the rachis of the date palm tree](#)

A Ladhar, M Arous, H Kaddami, Z Ayadi and A Kallel.....1

012002

OPEN ACCESS

[Synthesis and characterization of GO-hydrogels composites](#)

J Y Pereyra, E A Cuello, R Coneo Rodriguez, C A Barbero, E I Yslas, H J Salavagione and D F Acevedo.....14

012003

OPEN ACCESS

[Thermal management of metallic surfaces: evaporation of sessile water droplets on polished and patterned stainless steel](#)

T Czerwiec, S Tsareva, A Andrieux, G A Bortolini, P H Bolzan, G Castanet, M Gradeck and G Marcos.....22

012004

OPEN ACCESS

[Combination of experimental and numerical methods for mechanical characterization of Al-Si alloys](#)

A Kruglova, M Roland, S Diebels and F Mücklich.....32

012005

OPEN ACCESS

[Hot cracking of Structural Steel during Laser Welding](#)

Rosa M. Pineda Huitron and Esa Vuorinen.....44

012006

OPEN ACCESS

[Frictional Performance Assessment of Cemented Carbide Surfaces Textured by Laser](#)

S Fang, L Llanes, S Klein, C Gachot, A Rosenkranz, D Bähre and F Mücklich.....52

012007

OPEN ACCESS

[Microstructure characterisation of Ti-6Al-4V from different additive manufacturing processes](#)

M Neikter, P Åkerfeldt, R Pederson and M-L Antti.....58

012008

OPEN ACCESS

[Evolution of the microstructure in carbon nanotube reinforced Nickel matrix composites processed by high-pressure torsion](#)

K Aristizabal, S Suárez, A Katzensteiner, A Bachmaier and F Mücklich.....66

012009

OPEN ACCESS

[Effect of surface etching and electrodeposition of copper on nitinol](#)

E Ramos-Moore, A Rosenkranz, L F Matamala, A Videla, A Durán and J Ramos-Grez.....73