

# Materials Characterisation IV

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## Computational Methods and Experiments

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# Materials Characterisation IV

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## Computational Methods and Experiments

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**A.A. Mammoli**

*University of New Mexico, USA*

**C.A. Brebbia**

*Wessex Institute of Technology, UK*

**WIT**PRESS Southampton, Boston



**Editors:**

**A.A. Mammoli**

*University of New Mexico, USA*

**C.A. Brebbia**

*Wessex Institute of Technology, UK*

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E-Mail: [infousa@witpress.com](mailto:infousa@witpress.com)

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## Preface

Materials science in recent years has undergone rapid development in part as a consequence of advances in our ability to control and design at very small scales. Nanotechnology is seen as the new frontier in materials, with the promise of performance and functionality far exceeding today's standards. Many "conventional" materials are also benefiting from improvements in our ability to characterize them and better understand their behavior, often leading to incremental performance enhancements.

Characterization has by necessity kept pace with the development of new materials. In many cases, the characterization of complex behavior is made indirectly by the use of a model coupled with experimental data. In other cases, physical testing provides data to tune model parameters. The first part of the book is dedicated to the computational model – experiment interaction. Later sections contain a range of classical testing methods applied to innovative materials and composites, new testing methodologies, and two sections dedicated to cements and construction materials.

We note that many of the challenges that face society as a consequence of diminishing resources, especially energy, will in part be met by better materials, which ultimately should be designed and used with sustainability in mind.

We are confident that the conference will foster fruitful exchanges of ideas, which the book will extend to a wider audience still. The contents of this book reflect the quality of the submissions and the diligence of the reviewers, whom we wish to thank.

The Editors  
New Forest, 2009

# Contents

## Section 1: Computational models and experiments

Identification of material properties of FRC using coupled modeling <i>P. Procházka, A. Kohoutková &amp; J. Vodička</i> .....	3
A micromechanical model and numerical simulation of framework interstice concrete <i>Q. G. Yang, Z. J. Yi, X. B. He, Y. H. Ma, F. Huang &amp; C. H. Zhao</i> .....	13
Optimization of a numerical model of three-dimensional heat transfer during friction stir welding of 304L stainless steel <i>D. Furse &amp; C. Sorensen</i> .....	23
ANN Model to predict the bake hardenability of Transformation-Induced Plasticity steels <i>A. Barcellona, D. Palmeri &amp; R. Riccobono</i> .....	33
Transient and steady-state heat conduction analysis of two-dimensional functionally graded materials using particle method <i>H. Sakurai</i> .....	45
A unique computational algorithm to simulate probabilistic multi-factor interaction model complex material point behavior <i>C. C. Chamis &amp; G. H. Abumeri</i> .....	55

## Section 2: Mechanical characterisation and testing

Evaluation of dynamic connection designs for road safety barriers <i>D. A. F. Bayton</i> .....	71
---	----

Characterization of dynamic tensile and shear strength of safety bolts in light collision safety devices of a train <i>J. S. Kim, H. Huh &amp; T. S. Kwon</i> .....	81
Mechanical properties of a baseline UHPC with and without steel fibers <i>E. M. Williams, S. S. Graham, S. A. Akers, P. A. Reed &amp; T. S. Rushing</i> .....	93
A rheological comparison of hard grade binders with polymer modified bitumen under aged and unaged conditions <i>I. Hafeez &amp; M. A. Kamal</i> .....	105
Probabilistic model and experimental identification of screw-attachment in plasterboard <i>T. T. Do, C. Soize &amp; J.-V. Heck</i> .....	115
Use of copper slag as a replacement for fine aggregate in reinforced concrete slender columns <i>A. S. Alnuaimi</i> .....	125
Characterization of field-dependent elastic modulus and damping in pure nickel and iron specimens using a new experimental system <i>A. L. Morales, A. J. Nieto, J. M. Chicharro, P. Pintado &amp; R. Moreno</i> .....	135
Experimental determination of representative elementary volume of sands using X-ray computed tomography <i>O. Al Hattamleh, M. Razavi &amp; B. Muhunthan</i> .....	145
Short-time test for evaluating the machinability of alloys <i>M. Alvarado, H. Siller, P. Zambrano, C. Rodríguez, M. A. Rodríguez, A. Juárez, H. Toscano &amp; A. Mascareñas</i> .....	155
Dynamic shear stress in a double lap bonded assembly <i>G. Challita, R. Othman, P. Guegan, K. Khalil &amp; A. Poitou</i> .....	167
High velocity impact of carbon composite plates: perforation simulation <i>E. Jacquet, A. Rouquand &amp; O. Allix</i> .....	175
The effect of bent-up tab shear transfer enhancement shapes, angles and sizes in precast cold-formed steel-concrete composite beams <i>M. J. Irwan, A. H. Hanizah, I. Azmi, P. Bambang, H. B. Koh &amp; M. G. Aruan</i> .....	185

Material phase transformations due to shock wave loading in contact geometry <i>A. K. Sharma</i> .....	197
--	-----

### Section 3: Materials characterisation and testing

Experimental and theoretical investigation of the microstructural evolution in aluminium alloys during extrusion <i>T. Kayser, F. Parvizian, B. Klusemann &amp; B. Svendsen</i> .....	209
---	-----

Fracture toughness $K_{IC}$ of cemented carbide WC-Co <i>S. Doi &amp; M. Yasuoka</i> .....	217
---	-----

Characterisation of natural Zeolite and the feasibility of cations and anions removal from water <i>G. Badalians Gholikandi, H. R. Orumieh &amp; H. R. Tashauoei</i> .....	227
--	-----

Resonant ultrasound spectroscopy for investigation of thin surface coatings <i>H. Seiner, M. Růžek, P. Sedlák, L. Bicanová &amp; M. Landa</i> .....	237
---	-----

The effect of cerium solutions on 316L stainless steel <i>M. Askarian, M. Peikari, S. Javadpour, S. Masoum &amp; A. Abolhasanzade</i> .....	249
--	-----

Image analysis application in metallurgical engineering and quality control <i>Z. Odanović, M. Djurdjević, G. Byczynski, B. Katavić &amp; V. Grabulov</i> .....	259
--	-----

### Section 4: New methods

Ultra-high-performance fiber reinforced concrete: an innovative solution for strengthening old R/C structures and for improving the FRP strengthening method <i>A. G. Tsonos</i> .....	273
---	-----

Improvement in wear resistance of TiNi alloy processed by equal channel angular extrusion and annealing treatment <i>Z. H. Li &amp; X. H. Cheng</i> .....	285
---	-----

Tunnelling measurements as a new method of investigation of thin film superconducting cuprate junctions <i>B. Chesca</i> .....	293
--	-----

## **Section 5: Advanced materials**

Synthesis, characterization and bioactivity evaluation of nano-structured hydroxyapatite <i>M. H. Fathi, V. Mortazavi, A. Hanifi &amp; S. I. Roohani</i> .....	309
Evaluation of ABS patterns produced from FDM for investment casting process <i>W. S. W. Harun, S. Safian &amp; M. H. Idris</i> .....	319
Thermoelectric effect in quantum wells and hetero-structure <i>H. L. Kwok</i> .....	329
Investigation of performance properties of novel composite fire-extinguishing powders based on mineral raw materials <i>L. Gurchumelia, G. Bezarashvili, M. Chikhradze &amp; O. Chudakova</i> .....	337

## **Section 6: Cements**

Experimental confirmation of some aspects of the microstructural model of the impedance spectra of porous materials <i>I. Sánchez, M. Cabeza, M. A. Climent &amp; X. R. Nóvoa</i> .....	347
Modelling of the elastic parameters development of an oilwell cement paste at a very early age under downhole conditions <i>M. Bourissai, F. Meftah, N. Brusselle-Dupend &amp; G. Bonnet</i> .....	359
Performance of concrete containing high volume coal fly ash - green concrete <i>C. Magureanu &amp; C. Negrutiu</i> .....	373
Influence of curing conditions on the mechanical properties and durability of cement mortars <i>J. M. Ortega, V. Ferrandiz, C. Antón, M. A. Climent &amp; I. Sánchez</i> .....	381

## **Section 7: Porous construction materials** **Special session organised by A. J. Klemm**

Microstructural characterisation of porous construction materials – major challenges <i>A. J. Klemm</i> .....	395
--	-----

Surfology: concrete surface evaluation prior to repair <i>L. Courard, F. Michel, D. Schwall, A. Van der Wielen, T. Piotrowski, A. Garbacz, F. Perez &amp; B. Bissonnette</i> .....	407
Development of new approaches to moisture content measurement for building materials <i>M. C. Phillipson, P. H. Baker, A. McNaughtan, M. Davies &amp; Z. Ye</i> .....	417
Cement-based composites for structural use <i>G. Moriconi</i> .....	429
<b>Author Index</b> .....	439