

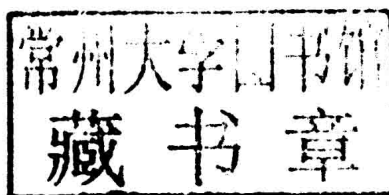
**Advancement of Materials
and Nanotechnology III**

Edited by
Kuan Yew Cheong, Zainovia Lockman,
Zuhailawati Hussain, Norlida Kamarulzaman,
Mariatti Jaafar and Khairunisak Abdul Razak

TTP TRANS TECH PUBLICATIONS

Advancement of Materials and Nanotechnology III

Selected, peer reviewed papers from the
3rd International Conference on
the Advancement of Materials and Nanotechnology 2013
(ICAMN III 2013),
November 19-21, 2013, Penang



Edited by

**Kuan Yew Cheong, Zainovia Lockman,
Zuhailawati Hussain, Norlida Kamarulzaman,
Mariatti Jaafar and Khairunisak Abdul Razak**



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Trans Tech Publications Ltd
Churerstrasse 20
CH-8808 Pfaffikon
Switzerland
<http://www.ttp.net>

Volume 1024 of
Advanced Materials Research
ISSN print 1022-6680
ISSN cd 1022-6680
ISSN web 1662-8985

Full text available online at <http://www.scientific.net>

Distributed worldwide by

Trans Tech Publications Ltd
Churerstrasse 20
CH-8808 Pfaffikon
Switzerland

Fax: +41 (44) 922 10 33
e-mail: sales@ttp.net

and in the Americas by

Trans Tech Publications Inc.
PO Box 699, May Street
Enfield, NH 03748
USA

Phone: +1 (603) 632-7377
Fax: +1 (603) 632-5611
e-mail: sales-usa@ttp.net

printed in Germany

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Preface

Sustainable development is perhaps the most critical issue to be addressed in the 21st century. As many of the approaches to address these challenges are revolving around "materials technology" the theme selected of the third International Conference of Advanced Materials and Nanotechnology (ICAMN III) was "**Next Generation of Sustainable Materials**". The challenges of sustainable development will require materials engineers and scientists to think beyond the current definition of what constitutes the "best" material for a given application. It requires one to think of how the innovation of materials (via research on certain materials for example) can contribute to the known key thematic areas of sustainability: energy, population, food and water, materials resources and health.

This conference aimed to address on the vital role of materials in sustainable development. Progress of materials science (especially in nanotechnology) to the realisation of sustainable development was explored. Although the main focused may be materials innovation oriented, it is also important to realise that innovation is only part of the solution, considerations of other materials-related issues such as limited resources, green processing technique, toxicity of materials, effect of materials to the environment, recycling and life cycles are necessary and ought to be addressed as well. To cover all of these aspects was impossible given the time limitation of this event, but we organised 6 symposia in ICAMN III which cover the most important topics; *Green and Sustainable Materials, Nanomaterials, Structural Materials, Electrochemical & Materials For Alternative Energy Production, Polymeric Materials and Composites, Biomaterials/Medical and Pharmaceutical Materials & Technology*, which have been translated into the 6 chapters of this proceeding.

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CHAPTER 1:

Nanomaterial Research and Application

