



# University of HUDDERSFIELD

## University of Huddersfield Repository

UNSPECIFIED

Future Technologies in Computing and Engineering: Proceedings of Computing and Engineering Annual Researchers' Conference 2010: CEARC'10

### Original Citation

Lucas, Gary and Xu, Zhijie, eds. (2010) Future Technologies in Computing and Engineering: Proceedings of Computing and Engineering Annual Researchers' Conference 2010: CEARC'10. University of Huddersfield, Huddersfield. ISBN 9781862180932

This version is available at <http://eprints.hud.ac.uk/9299/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: [E.mailbox@hud.ac.uk](mailto:E.mailbox@hud.ac.uk).

<http://eprints.hud.ac.uk/>



*University of*  
**HUDDERSFIELD**

**FUTURE TECHNOLOGIES  
IN COMPUTING AND ENGINEERING**

Proceedings  
of  
Computing and Engineering Annual Researchers'  
Conference 2010

**CEARC'10**

**Edited By:  
Prof. Gary Lucas, Dr. Zhijie Xu**

**Organising Committee:  
Prof. Gary Lucas, Dr. Zhijie Xu, Mrs. Trudy Lockwood, Mrs. Gwen Wood**



## **Preface**

It is my pleasure to introduce this volume of proceedings for the 2010 School of Computing and Engineering Annual Researchers' Conference (CEARC'10). The proceedings include 30 papers and 10 posters submitted from postgraduate researchers across the Informatics and Engineering and Technology Departments within the School of Computing and Engineering at the University of Huddersfield.

The Annual Conference started in its current format in 2006 and is intended as a forum for encouraging postgraduate researchers to develop their research and innovation skills and to present their findings to a technical audience. The CEARC conference series covers frontier issues in the computing and engineering sciences and the application of these issues to business, industry, and other areas.

This year the conference has a special theme 'Future Technologies', with particular emphases on (i) bio-fuels and (ii) techniques for the diagnosis of faults in machinery as well as a range of other topics.

The papers in the proceedings were selected after careful consideration of their research quality and the content of the presentations. The wide spectrum and depth of subject material contained within the papers reflect the aims and objectives of the research strategies of both the School and the University.

I trust that you will find this volume to be a valuable record of research carried out in the last 12 months and to provide an excellent reference source for both established academics and young researchers.

Finally, I would like to thank the authors and the reviewers for their input to this issue of the proceedings.

Professor Gary Lucas and Dr. Zhijie Xu  
School of Computing and Engineering  
University of Huddersfield

# Copyright Notice

All information presented on this system is deemed to be the copyright of the University of Huddersfield unless stated otherwise. Copyright is implied irrespective of whether a copyright symbol or a copyright statement is displayed.

The copyright of any information presented on this system must not be infringed without the written consent of the University of Huddersfield or the owner of the copyright.

The University of Huddersfield will take reasonable care to ensure that it does not knowingly infringe the copyright of anyone. If it is suspected that information on this system is infringing the copyright of someone, The University of Huddersfield should be informed so that appropriate action can be taken.

The University of Huddersfield acknowledges all trademarks.

---

# Disclaimer

The University of Huddersfield will take reasonable care in preparing the information presented on this system. However the security, fitness for purpose and the accuracy of such information is not implied and cannot be guaranteed. Anyone who uses this information (and this system), does so at their own risk and shall be deemed to have indemnified the University of Huddersfield from any injuries or damages arising from such use.

The University of Huddersfield reserves the right to immediately remove any information on this system that is the subject of legal objection, once notification of legal objection has been received.

Computing and Library Services reserve the right to immediately remove any information presented on this system that is considered to be putting the University of Huddersfield or its services at risk.

## Presentations

<i>Key Parameters In Loose Abrasive Machining</i> .....	1
I Arief, Advanced Machining Technology (AMTG) Research Group	
<i>Rotor Misalignment Detection using a Wireless Sensor and a Shaft Encoder</i> .....	6
L Arebi, Diagnostic Engineering Research Centre	
<i>The Study of Acoustic Source Localization using a Small Microphone Array for Condition Monitoring</i> .....	14
D Zhen, Diagnostic Engineering Research Centre	
<i>Can Transistors Sound like Valves?</i> .....	20
M Aitchison, Music Technology Research Group	
<i>A Notational Design of Join Points</i> .....	27
S Iqbal, Software Engineering Research Group (SERG)	
<i>Fuzzy Fusion of Colour and Shape Features for Efficient Image Retrieval</i> .....	31
H Aboaisa, Computer Graphics, Imaging and Vision (CGIV) Research Group	
<i>Achieving ISO 9000 success in SME's: the Development of a Work Environment Framework</i> .....	37
M Maatgi, Systems Engineering Research Group	
<i>Building a Flexible Surface Characterisation System Architecture</i> .....	43
X Lan, Surface Metrology Research Group	
<i>Simulation of Adaptive Sampling in Profile Measurement for Structured Surfaces'</i> .....	48
J Wang, Surface Metrology Research Group	
<i>Experimentation to Reduce Friction from Novel Abrasive Tape Polishing Method</i> .....	54
A Wilkinson, Advanced Machining Technology (AMTG) Research Group	
<i>Finite Element Analysis of Effect of Weld Toe Radius and Plate Thickness on Fatigue Life of Butt Welded Joint</i>	60
H Radhi, Engineering Control and Machine Performance (ECMPG)) Research Group	
<i>Performance and Emissions of Compression Ignition Engines using Waste Cooked Oil as Fuel</i> .....	65
H Algasim, Automotive Engineering Research Group	
<i>Evaluation of Properties and use of Waste Vegetable Oil (WVO), Pure Vegetable Oils and Standard Diesel as used in Compression Ignition Engine</i> .....	71
A Abuhabaya, Automotive Engineering Research Group	
<i>Finite Element Analysis of Metal Weapons in a Time-Domain Transient Magnetic Field</i> .....	77
P Pati, Systems Engineering Research Group	

## Additional Papers

<i>Learning and Teaching Mechanical Engineering Courses with Blended Learning Environment - Higher Order Application of Bloom's Taxonomy</i> .....	84
S Abdulrasool, Automotive Engineering Research Group	
<i>Fault Classification using an Artificial Neural Network based on Vibrations from a Reciprocating Compressor</i> .....	92
M Ahmed, Diagnostic Engineering Research Centre	
<i>Consumers Channel Choice Behaviour in Multi-Channel Environments: What are the Influences on Consumers to Choose the Online Distribution Channels over other alternative Offline Channels'</i> .....	98
F Al-Majali, Knowledge Engineering and Intelligent Interfaces (KEII) Research Group	
<i>A Diagnostic Study on the Teaching And Learning Styles in Engineering Education</i> .....	105
M Al-Seddiqi, Automotive Engineering Research Group	
<i>The Identification Of Enterprise System Limitations within Manufacturing Supply Chains</i> .....	110
A Bashir, Systems Engineering Research Group	
<i>Online Monitoring of Engine Oil Quality Based on AE Signal Analysis</i> .....	116
F Elamin, Diagnostic Engineering Research Centre	
<i>The Effectiveness of using Project Management Tools and Techniques for Delivering Projects</i> .....	124
M Hajjaji, Systems Engineering Research Group	
<i>Mobile Phone Text Processing And Question-Answering</i> .....	130
A Jilani, Knowledge Engineering and Intelligent Interfaces (KEII) Research Group	
<i>Improving Prototype Consistence for Wizard-Of-Oz Simulations and Evaluations</i> .....	136
X Li, Computer Graphics, Imaging and Vision (CGIV) Research Group	
<i>Investigation of Doppler Effects on High Mobility Odfm-Mimo Systems</i> .....	142
H Mohammed, Systems Engineering Research Group	
<i>Vibration Compensation of Wavelength Scanning Interferometer for In-Process Surface Inspection</i> .....	148
H Muhamedsalih, Systems Engineering Research Group	
<i>Predicting and Determining the Contact Pressure Distribution in Joints Formed by V-Band Clamps</i> .....	154
M Muller, Engineering Control and Machine Performance (ECMPG) Research Group	
<i>The Effect of Tool Geometry on Rubbing and Ploughing Phenomena in Nano Abrasive Machining</i> ... ..	160
J Oluwajobi, Advanced Machining Technology (AMTG) Research Group	
<i>Finite Element Simulation of Chip Formation</i> .....	166
T Opoz, Advanced Machining Technology (AMTG) Research Group	
<i>Modeling of The Concepts in Iso Standards for Profile Surface Texture</i> .....	172
Q Qi, Centre for Precision Technologies	
<i>Investigation of the Material Removal Characteristic for Polishing CoCr Alloy</i> .....	177
S Zeng, Surface Metrology Research Group	

## Abstracts

<i>Potential use of Emerging Mobile Technologies in Portfolio Development</i> ..... E Ahmed, Pedagogical Research Group	183
<i>Microelectronic Implementation of Error Correcting Codes for Dicode Pulse Position Modulation</i> ..... B Al-Nedawe, Systems Engineering Research Group	184
<i>Optimizing Condition Monitoring Techniques Applied to a Three Stage Reciprocating Compressor in a FMCG Industry</i> ..... R Appadoo, Diagnostic Engineering Research Centre	185
<i>Machine Performance and Condition Monitoring through Data Mining and Database Optimization</i> ..... M Baqqar, Diagnostic Engineering Research Centre	186
<i>A Low Cost Electronic Load for Renewable Energy Systems</i> ..... S Berberkic, Systems Engineering Research Group	187
<i>Performance of Di-Code Pulse Position Modulation Technique in Diffuse Indoor Wireless Optical Communication Systems</i> ..... A Buhafa, Systems Engineering Research Group	188
<i>Non-Contact Measurement and Analysis of Machine Tool Spindles</i> ..... D Clough, Engineering Control and Machine Performance (ECMPG)) Research Group	189
<i>A Fast Algorithm for Morphological Filters</i> ..... S Lou, Centre for Precision Technologies	190
<i>Measurement Two Phase Flow Parameters using Impedance Cross-Correlation and Electromagnetic Flow Meters</i> ..... Y Muhamedsalih, Systems Engineering Research Group	191
<i>Limitations of Data Handling within the Machine Tool Service</i> ..... C Perkins, Engineering Control and Machine Performance (ECMPG)) Research Group	192
<i>Intelligent Wireless Sensor Network</i> ..... B Saeed, Systems Engineering Research Group	193