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CENTRE ACTIVITIES

UM-JWRI Seminar Joins Researchers For Collaborations

21 November – A delegation from the Faculty of Engineering, University of Malaya, led by Dr Farazila Yusof, has successfully participated in a two days joint research seminar and discussion with the Joining and Welding Research Institute (JWRI), Osaka University, Japan.This is the first event under the MoU signed between JWRI and the Faculty of Engineering, University of Malaya on 5 September 2012. Prof Kazuhiro Nakata, the director of JWRI, applauded such collaborative event and was optimistic that more young talented scientist can be nurtured in the future. Subsequent planned activities under the MoU include student co□supervisions, visiting scholar programmes, joint technical seminars and the setting up of a regional JWRI office in University of Malaya.

Dr Farazila with Professor Hidetoshi Fujii, a renowned expert in Friction Stir Welding Technology

"Interactive Discussion/Meeting with Editor Vacuum Journal : Publishing in a High Impact Journal"

6th November 2012 at The Cube, Engineering Tower, Faculty of Engineering – AMMP CENTRE organized free talk on "How to Publish in a High Impact Journal" by Visiting Professor, Prof Dr Kiyotaka Wasa. Prof Dr Kiyotaka Wasa is a Life Fellow of IEEE and already published more than 300 high impact journal papers, 700 patents, and 10 books.The seminar focused on "How to publish excellent paper" attracted participants from various faculties. The talk was held for 1 hour 30 minutes and participants were kept update on the techniques and evaluation points from an examiner on writing papers. The tips given were refreshed in participants mind all the time by giving frequent seminars.

Participants with Prof Wasa

Research Talk on "Material engineering for a better global environment"

2nd November 2012 at BP202 room, Block J, Faculty of Engineering – AMMP CENTRE arranged a free research talk by Visiting Professor, Prof Dr. Kiyotaka Wasa from Kyoto University, Japan. Dr Sr Ahmed Sarhan as a moderator , arranged the 1 hour and 30 minutes talk for undergraduates with Prof Dr. Kiyotaka Wasa allowing them to gain the knowlegde for a better global environment.

Participants attending the research talk

SUMMARY CURRENT RESEARCH

Effect Of Introducing Porous Metal And Powered Metal On The Mechanical Properties Of Pb-free Solders

Soldering is a well-known joining method that uses a filler metal, the solder, and it is characterized by a melting point below 425°C. Sn-Pb solder alloys have been widely used as the solder in the assembly of electric and electronic parts. However, the use of Pb-based solder is restricted as lead is hazardous to the environment and human health. This issue has led researchers to find alternative lead-free solder alloys for future applications. Higher defect rates can occur under such a situation. To overcome the problem, a number of researchers have further reformulate and strengthened Pb-free solders by adding various particles into the solders and it has been proven that these new combination of composite solders have actually enhanced the thermal and mechanical properties of the resulting joints.

Researcher;
Nashrah Hani

Investigate the Characterization of the Machine Tool Spindle Stiffness in Radial Direction for Precise Monitoring of Cutting Forces for Intelligent Machining

This research describes how to investigate the characterization of the machine tool spindle stiffness in radial direction for precise monitoring of cutting forces in end milling process by using displacement sensors. Four sensitive eddy-current displacement sensors are installed on the spindle housing of a machining center so that they can detect the radial motion of the rotating spindle. Thermocouples are also attached to the spindle structure, and the stability of the displacement sensing is examined. The change in spindle stiffness due to the spindle temperature and the speed is investigated. Finally, monitoring results of small and medium scale cutting forces in end milling operations are shown.

Researcher;
Dr. Sr Ahmed Aly Diaa Mohammed Sarhan

VISITING PROF PROFILE

Professor Dr Kiyotaka Wasa
B.Sc.1960, Osaka University in Electrical Engineering,
Dr.Eng. 1968, Osaka University in Plasma Physics.

Adjunct Prof. Yokohama City University
Researcher, Kyoto University
IEEE Life Fellow

He has done seminal work on plasma-based thin film materials engineering from academic to industrial production since 1960's. He has proposed the usefulness of cathodic sputtering for a synthesis of novel materials since 1960's. He first proposed the planar magnetron sputtering system (1969) which is now widely
used in a production of semiconducting devices. He applied to produce a wide variety of electronics/photonics thin film materials including perovskite ferroelectric materials (since 1967), SAW device grade piezoelectric ZnO (1972), diamonds (1976), SiC high temperature thermistors (1979), and high-Tc superconductors (1987). It is noted he first succeeded to synthesized diamond crystallites at room temperature (1984) and atomically controlled layered high Tc superconductors (1988) during his stay at Panasonic. He has also proposed plasma-based thin film materials processing as an environment benign industrial technology (1982). He studied on atomically controlled deposition of thin film materials including single crystal perovskite for the environment catalysis at RITE Institute and Yokohama City University.

He is also interesting to education of young generation. He is visiting oversea countries to educate young generation and/or make exchange program of young students between Japan and Asian country. He also gave a series of lecture on thin film materials science at Penn. State University (since 1993), at UESTC China (since 1986) , K-JIST Korea (since 1996), Nanjig University (since 1997) and Tohoku University (since 2009). He has produced thin film devices including ZnO SAW devices, SiC thin film temperature sensors, and high density magnetic heads at Panasonic (1981). These academic researches and educational activity are still continued at Kyoto University, although he is now over 70 years old.

- Scientific Journals: more than 300 papers: Books: more than 10 books: Patents: more than 700 patents.
- Visit to AMMP in November 2012.

UPCOMING EVENTS

□ Visiting Professor, Prof Majid Reza Ayatollahi second visit to AMMP Centre in January 2013.

□ Public Talk/ Research Seminar "Micro and Nano-Indentation Techniques for Measuring The Mechanical Properties of Engineering Materials" at DK5 , Engineering Tower , Faculty of Engineering (2 pm- 4 pm) on 24th Jan 2013.

□ Postgraduate discussion on 25th Jan 2013 by Visiting Prof Majid Reza Ayatollahi

SPIN OFF COMPANY—ZECTTRON

ZECTTRON Sdn Bhd

Zecttron Sdn. Bhd.

6 & 7 December 2012—Zecttron Sdn. Bhd. attend MTDC Technology Conference 2012, held in conjunction with MTDC's 20th Anniversary, addresses issues on the establishment of a complete commercialization ecosystem to promote healthy development of technology start-up/ spin off companies, highly capable, knowledge-rich entrepreneurs and the market factors that stimulate growth of technology businesses in Malaysia. The title of the day are "The Journey of a Start-up, Symbiosis - A New Strategy to Incubate Start-ups, Malaysian Innovation System, Nurturing Universities/Research Institutions Innovation Culture, Head-to-head or Hand-in-hand

Among the important components to be covered in the conference are:

- Entrepreneurship
- Funding and investment
- Incubation and growth
- Technology innovation

Norhalim Yunus is the Chief Executive Officer of Malaysian Technology Development Corporation Sdn Berhad (MTDC). He has been with the company since 1993 and involved in undertaking projects in technology transfer, commercialization and start-up companies.

For further information, please visit our website at http://ammpcentre.com and http://zecttron.com