MYTRIBOS
Malaysian Tribology Society

MITC2015

MALAYSIAN INTERNATIONAL TRIBOLOGY CONFERENCE 2015

16-17 NOVEMBER 2015
PENANG, MALAYSIA

CARe
CENTRE FOR ADVANCED RESEARCH ON ENERGY
Universiti Teknikal Malaysia Melaka

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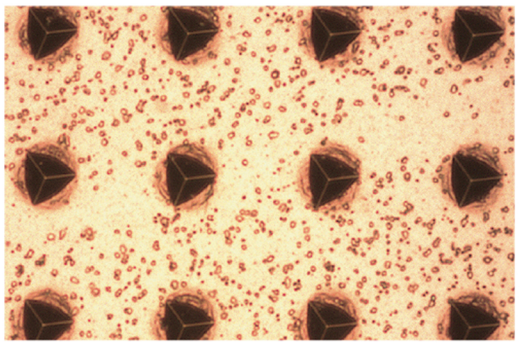

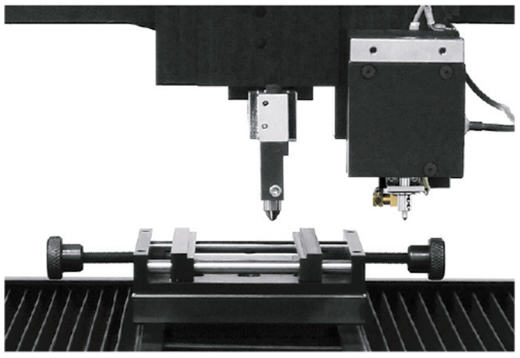
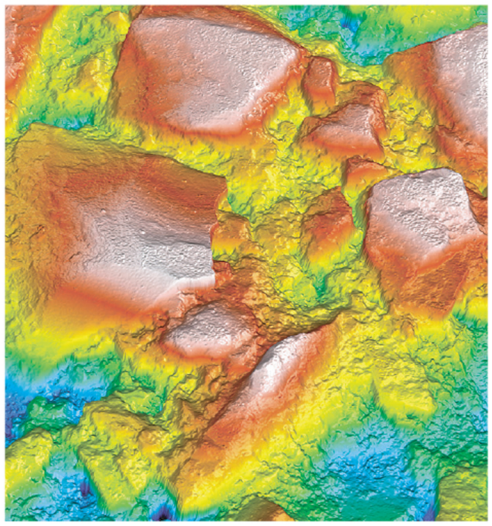
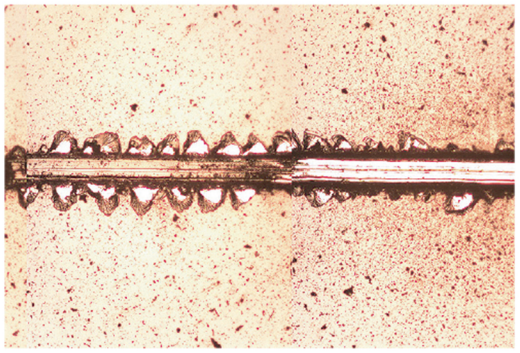
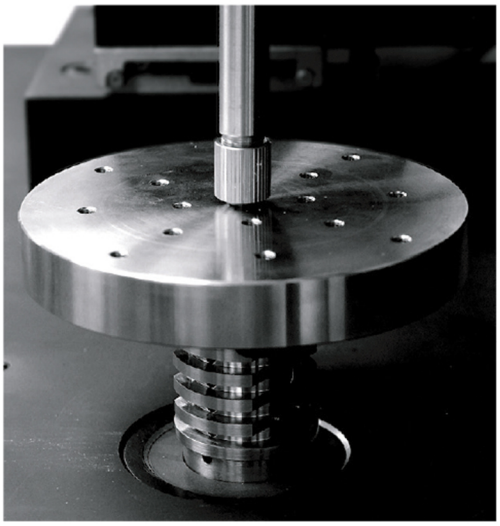

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CONTENT

FOREWORD BY DEPUTY MINISTER OF SCIENCE, TECHNOLOGY & INNOVATION (MOSTI)

Assalamualaikum W.B.T, Warmest Greetings & Salam 1Malaysia,

First and foremost, I would like to congratulate the Malaysian Tribology Society (MYTRIBOS), Centre for Advanced Research on Energy (CARe), Universiti Teknikal Malaysia Melaka (UTeM), other participating universities and industries on their concerted efforts to organise the Malaysian International Tribology Conference 2015 (MITC2015). I was made to understand that the MITC2015, now in its fourth edition will be making headway for researchers as well as professionals in the tribology field by converging together to share their ideas, research-findings and innovations. I am sure that all delegates will have the opportunity to obtain new knowledge and experience from the industry on new emerging technologies from this field.

I am happy to note that any technical conferences such as the MITC2015 will be a suitable platform for researchers to keep abreast on latest tribology researches be at the local, regional and international level. It is hoped that with this exposure, researchers will be more inspired to conduct high impact researches and to create advanced research innovation in the area of tribology.

It is my fervent hope that all participants will have a fruitful conference and I am looking forward for the efforts undertaken to organise this event will be a source of motivation and inspiration for our future generations to achieve greatness at a global scale.

Thank you.

Hon. Datuk Dr. Abu Bakar Mohamad Diah

Deputy Minister of Science, Technology and Innovation, Malaysia

FOREWORD BY MYTRIBOS PRESIDENT

Assalamualaikum Warahmatullahi Wabarakatuh,

On behalf of the Malaysian Tribology Society (MYTRIBOS), I would like to express warmest welcome to all participants to the Malaysian International Tribology Conference 2015 (MITC2015). We are pleased to join the tribology community at the beautiful venue of PARKROYAL Penang Resort, Malaysia for two full days of technical sessions, interactive gatherings and industrial education. Following the past success, Alhamdulillah, all praise to ALLAH S.W.T., this is the fourth tribology event organized by the Malaysian Tribology Society (MYTRIBOS). The current event of exciting agenda and 7 technical tracks is officially hosted by the Centre for Advanced Research on Energy (CARe), Universiti Teknikal Malaysia, Melaka. Tribology is the study of interacting surfaces in relative motion and encompasses the research fields of lubrication, friction and wear that leads to energy efficiency and sustainability. With recent advances and multidisciplinary nature, Tribology has been emerged as one of the key technology in 21st century. In this regard, this is much-anticipated event which allows tribologists to share and promote their research as well as a chance to extend their network in various aspects of fundamental and applied tribology.

MITC2015 will cover various aspects of tribology from the nanoscale to the macroscopic scale with emphasis on energy conservation in tribo-elements and tribo-systems. The initiatives of awards for the Best Young Tribologist and Best Oral Presentation in each technical session is to encourage the lively discussions and exchange of research ideas. Therefore, I am expecting the conference would bring fruitful outcome, particularly for the young tribologists by meeting up in person with established and renowned people from local and abroad in the respective field to get experiences, exchange research ideas, and build rapport through informal discussions. I hope this conference will be an epoch to raise researchers and leaders for the next generation.

I would like to take this opportunity to convey my special thanks to all members of organizing committee MITC2015, especially the MYTRIBOS organizing members for their relentless efforts towards making this event a success. Finally, I would like to express our deepest gratitude to the sponsors whose generosity of spirit and donations helped to ensure the success of this event.

Thank you.

Masjuki Bin Haji Hassan

President, MYTRIBOS

FOREWORD BY MITC2015 CHAIRMAN

Welcome to Malaysian International Tribology Conference 2015 (MITC2015)!

I would like to express warmest welcome to all participants to the Malaysian International Tribology Conference 2015 (MITC2015) held at PARKROYAL Penang Resort, Penang, Malaysia. Alhamdulillah, all praise to Allah, this is the fourth tribology event organized by the Malaysian Tribology Society (MYTRIBOS) after successful responds at the previous events. The current event is officially hosted by the Centre for Advanced Research on Energy (CARe), Universiti Teknikal Malaysia Melaka. This is much anticipated event which allows tribologists to share and promote their research as well as a chance to extend their network in every aspect of fundamental and applied tribology fields.

The aim of MITC2015 is to share the pioneering research ideas among academicians, researchers, students, authorities, and practitioners from universities, industries, institutions, and related agencies all around the world through oral presentations, thus promoting new opportunities for research activities enhancement. In addition, there is an opportunity for delegate especially young researchers and students to meet up in person with established and renowned people from local and abroad in the respective field to get experiences, exchange research ideas, and build rapport through informal discussions. This year, about 200 delegates from 19 countries attended the conference. An open access MITC2015 Proceedings can be viewed or downloaded at http://mytribos.org/proceedings/mitc2015.

I would like to take this opportunity to convey my special thanks to those who are involved in organizing MITC2015, especially from the MYTRIBOS members for successfully organizing this event. Finally, I would like to express our deepest gratitude to the sponsors for the support given in ensuring the success of this event.

Thank you.

Mohd Fadzli Bin Abdollah

Chairman, MITC2015

ABOUT MYTRIBOS

MYTRIBOS was established in 2007 and had officially been registered with the Malaysian Registrar of Societies a year after. The main objective of MYTRIBOS is to promote proper practices in research and development related to the field of tribology in Malaysia and to facilitate collaborations between academia and industry in all possible endeavors. Currently, MYTRIBOS has 92 registered members with different disciplinary background from local and international universities, industries and research institutes. MYTRIBOS has been active and will continue to organize various activities such as conferences, seminars, workshops, training, publications, and community services in the spirit to promote a better industry-community-academia network in local and international arena.

VISION

To promote research and development in the field of tribology in Malaysia within academic and industrial organizations.

MISSION

- To facilitate the exchange of information technology in tribology amongst tribology practitioners in Malaysia.
- To cooperate and affiliate with other regional or International professional bodies having similar interests to those of the society.
- To support and sponsor academic and research activities among members.
- To print and circulate publications in areas related to the field of tribology

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MYTRIBOS
Malaysian Tribology Society

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ABOUT MITC

Starting off as the National Tribology Conference in 2009 (NTC2009) and the Regional Tribology Conference in 2011 (RTC2011), the conference was renamed as the Malaysian International Tribology Conference in 2013 (MITC2013) to give a more global image.

Malaysian Tribology Society (MYTRIBOS) is ever committed to continuously organize an international conference in the effort to advance tribology for a more sustainable world.

In 2015, once again, MYTRIBOS in association with the Centre for Advanced Research on Energy (CARe) of Universiti Teknikal Malaysia Melaka (UTeM) and other participating universities and industries is geared to organize the Malaysian International Tribology Conference 2015 (MITC2015). The MITC2015 is also supported by the International Tribology Council (ITC), Board of Engineers Malaysia and Japanese Society of Tribologist (JAST).

The conference will take place in Penang during 16 ~ 17 November 2015. The capital city of Penang is the George Town. This historical city centre has been listed as a UNESCO World Heritage Site since 2008.

The objective of MITC2015 is for the scientists, scholars, engineers and students from universities, research institutions and industries all around the world to present findings of ongoing research activities, and hence foster research collaborations between the universities and the industries. The other objective is to introduce young tribologists in the scientific field of tribology through keynote lectures and presentations, to offer mentoring through senior scientists, and to foster the building of networks through the informal style of the event.

Topics covered in this conference include:

- Bearing Design and Technology
- Bio- and Eco-tribology
- Biomimetics in Tribology
- Condition Monitoring in Tribo-systems
- Contact Mechanics
- Industrial Case Studies
- Lubricants, Lubrication, Fuels and Additives
- Nano- and Micro-tribology
- Tribo-chemistry and Tribo-corrosion
- Tribology in Machine Elements
- Tribology in Manufacturing
- Tribology in Transportation
- Tribology of Materials
- Tribo-surfaces
- Surface Engineering and Coatings

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KEYNOTE SPEAKER 1

ASSOC. PROF. DR. TALIB RIA JAAFAR
Universiti Teknologi MARA
MALAYSIA

ABSTRACT:

Hard thin film coatings deposited by Cathodic Arc Physical Vapor Deposition technique

Physical vapor deposition technique is used to deposit hard and wear resistant thin film of coating material into the substrate surface without changing the substrate properties; commonly referred as thin films. Hard thin film coatings are employed to enhance the surface characteristics of the substrates such as hardness, surface roughness, wear resistance and corrosion resistance without changing the bulk properties of the substrates. Demands for transition metal nitrides such as TiCN, TiCrN, TiAlN, CrAlN synthesized by physical vapor deposition (PVD) as hard film coatings are increasing rapidly due to their superior mechanical, tribological, and corrosion characteristics, thus increasing the components life and productivity of the production. These metal nitride coatings are used to improve friction, wear and life of cutting tools, mould and dies, machine elements, automotive components. Type of coating applied on the substrate depends on the applications of that component. Physical vapor deposition uses physical forces to deposit a pure source material which is gasified via evaporation. Physical vapor deposition is performed at relatively low temperature (300° to 600°C) as compared to chemical vapor deposition operating at a temperature of 1000°C. The stoichoimetric composition of the film arises from reactive gas absorption by growing films, reactive collision between gas molecules and vapour species emitted from the evaporation source, and surface reaction between gas molecules and condensed films. Quality of thin film coating produced on the substrate depends on; (i) surface preparation such as degreasing and polishing, surface pre-cleaning such as ultra-sonic and plasma sputtered etching, (ii) deposition parameters such as substrate temperature, chamber pressure, current, reactive and working gas flow rate, negative bias voltage, (iii) target shape, geometry of the chamber, and the position of the substrate relative to the target. Though the physical vapor deposition has been used widely and many researches have been conducted, there are some opportunities in developing high quality in hard thin film coating. These include (i) optimizing the coating process parameters using Taguchi or Design expert method, (ii) determining significant effect of coating process parameter on the mechanical and tribological properties, (iii) determining residual stress in thin film coating, (iv) establishing failure mechanism on different type of coating materials, (v) developing life predicting model. In this keynote lecture, results of some works in depositing hard thin film of TiN, TiZrN, TiCN, TiAlN on high speed steel and tungsten carbide substrates will be presented and discussed. The tool life and wear mechanism of coated-drill during drilling and coated-cutting tool insert during turning will also be presented and discussed. The characterization tools employed in this study include (i) x-ray photo electron spectroscope, (ii) x-ray diffraction, (iii) pin-on-disc tribometer, (iv) glow discharge optical emission spectroscope, (v) field emission scanning electron microscope, (vi) scratch tester, and (vii) microhardness tester.

KEYNOTE SPEAKER 2

PROF. DR. MICHAEL M. KHONSARI
Louisiana State University
UNITED STATES OF AMERICA

ABSTRACT:

A unified approach for analysis of wear and fatigue

Control and quantification of friction, as a ubiquitous phenomenon, has been of significant priority in numerous practical applications involving contacting bodies. Economic implications ensuing from the loss of material, energy and functionality caused by friction and wear further underline the need for robust modeling techniques. While attempts to afford the development of comprehensive wear models have been profuse, the degree of their success has been limited owing, in large part, to the variegated nature of friction and wear. Today, in light of the existing body of knowledge, it is acknowledged that wear of materials involves a variety of complex and physically diverse phenomena that often occur in an inextricably intertwined fashion. It is, therefore, of no surprise that there exists a scarcity of predictive models to realistically account for the multifarious processes involved. Accordingly, the development of approaches that can properly unify the processes underlying wear and friction is an important scientific endeavor. Friction, wear, and fatigue are examples of dissipative processes in tribology wherein the system's *free energy*, Ψ, responsible for doing useful work, decays with time. That is, if Ψ_i denotes the initial free energy of a pristine tribosystem, then after completion of the dissipative process its free energy decreases to Ψ_f such that $\Psi_f < \Psi_i$. This decay in the free energy continues until the system attains a minimum at the equilibrium state in accordance with the principle of minimum free energy. Thus, the system's path to the minimum free-energy is always accompanied by increasing entropy until it reaches its peak value at the equilibrium state. The increase in entropy is a consequence of increasing disorder in the system with time. Therefore, notwithstanding the multiplicity of underlying dissipative processes involved, they all share one unique feature: they all produce entropy. Therefore, thermodynamic entropy production is believed to be a propitious measure for a systematic study of wear and friction. In this lecture, I present results of a series of recent experimental and analytical development associated with surface degradation such as adhesive wear as well as fatigue fracture within the framework of irreversible thermodynamics. This view offers a potentially transformative path forward for the development of predictive methodologies for variety of applications.

KEYNOTE SPEAKER 3

PROF. DR. MOHAMED EL MANSORI
Arts Métiers ParisTech
FRANCE

ABSTRACT:

Tribology issues in low-friction engine surface finishing

Reducing the energy wasted to combat friction in internal combustion engines should help reduce consumption of fossil fuels. In the total engine friction equation, there are three major sources of friction loss: piston and rings, the valve train and the crankshaft and engine bearings. The tribo-system of piston/rings/cylinder is the undisputed first source, claiming about a 50% share. Second major source of friction loss is crankshaft and engine bearings, where the friction loss rises proportionally with RPM. Manufacturers are hence searching for low friction surface finishing processes that enable engine builders to achieve the tough emissions standards looming on the horizon. For example, in the case of the piston/rings/cylinder tribo-system, the major issue is to hone the cylinder liner sizes down to the millionths. The cylinder liner surface is in fact the "original" micro-scale structured surface; designed with a deterministic pattern of high aspect ratio features and anisotropy of surface properties. It comprises alternating flat plateaus (bearing regions) and deep valleys for lubricant, transportation. To manufacture such a tribo-functional surface, abrasive honing process is the choice for mass production. For the crankshafts finishes, rotating assemblies ride on a thin wedge of oil having thickness of only 1.3 μm in some cases. Moreover, to reduce friction as much as possible, oil itself is much less viscous as well, so it is especially important to achieve proper surface finish on all crank journals. Belt polishing or micro-polishing is technically the most advanced way to achieve surface finish on cranks. The main goal of polishing any crankshaft is to create "peak-free" surface to handle load without changing the size of their ground parts. The objective of this keynote paper is to show how tribology can be used to control low-friction surface design based on the premise that an intimate connection exists between the abrasive wear mechanisms prevailing during finishing and the multi-scale induced-modification on the produced surfaces. The implementation of this multiscale approach within a mass production environment allows to correlate the tribo-functional performance of the intolerance designed surface and the manufacturing process of its generation. The various applications of this multiscale approach also demonstrate that the process signature should respond in a predictable fashion to change its functional performance with respect to the durability and energy consumption footprint of Internal Combustion Engines.

KEYNOTE SPEAKER 4

PROF. DR. TAKAHISA KATO
The University of Tokyo
JAPAN

ABSTRACT:

Overlooking map of tribotechnology

The Japanese Society of Tribologists (JAST) Technical Committee of Tribotechnology Roadmap is making the overlooking map of tribotechnology. The report shows briefly the structure and mechanism of the map and introduces the future tribotechnology requested by industries. The map has an effect to visualize the relation between the triboelements and tribosystems through the tribological issues to be solved. In addition, the map visualizes the application of fundamental tribology researches.

INVITED SPEAKERS

WILFRIED J. BARTZ
Professor

Technische Akademie Esslingen, GERMANY

Title: Tribological aspects of wind and water power plants.

VLADIMIR A. LEVCHENKO
Professor

Lomonosov Moscow State University, RUSSIAN FEDERATION

Title: New generation carbon coatings with monocrystalline structure as the promising new method of oil lubricity increasing.

ALOIS K. SCHLARB
Professor

University of Kaiserslautern, GERMANY

Title: Status and developments in tribology of polymer composites.

MARIYAM JAMEELAH GHAZALI
Assoc. Professor

Universiti Kebangsaan Malaysia, MALAYSIA

Title: Nature inspired design in tribology.

TAKAYUKI TOKOROYAMA
Assoc. Professor

Akita University, JAPAN

Title of Invited Talk: Low friction property of carbon overcoat DLC under boundary lubrication

SYAHRULLAIL SAMION
Assoc. Professor

Universiti Teknologi Malaysia , MALAYSIA

Title of Invited Talk: Effect of surface texturing on friction coefficient between aluminum and alloy tool steel under lubricated sliding contact.

GUOXIN XIE
Assoc. Professor

Tsinghua University, PR CHINA

Title of Invited Talk: Adsorption and friction of Mussel Adhesive Protein (MAP) films under polarization.

NOR HAYATI SAAD
Assoc. Professor

Universiti Teknologi MARA, MALAYSIA

Title of Invited Talk: Performance analysis of thermal arc spray aluminium coating as a sacrificial anode and mechanical properties in artificial seawater.

YOUNG-JUN JANG
Dr.

Korea Institute of Materials Science, SOUTH KOREA

Title of Invited Talk: High speed and large area coating of tetrahedral amorphous carbon with filtered multi cathode vacuum arc plasma system.

NOREFFENDY TAMALDIN
Assoc. Professor

Universiti Teknikal Malaysia Melaka, MALAYSIA

Title of Invited Talk: Tribological impact of CI engine piston rings under different blend ratio biodiesel.

RAMDZIAH MD NASIR
Dr.

Universiti Sains Malaysia, MALAYSIA

Title of Invited Talk: An integration using Taguchi /response surface method on wear and friction of stainless steel-pin-on-pure al block.

MOHAMMED RAHMANI
Certified Energy Auditor

The National Company of Electricity and Gas (SONELGAZ), ALGERIA

Title of Invited Talk: Power generation and blade turbine erosion.

NOR AZMMI MASRIPAN
Dr.

Universiti Teknikal Malaysia Melaka, MALAYSIA

Title of Invited Talk: Evaluation of transformed layer of DLC coating after friction test using Atomic Force Microscopy (AFM).

KOAY MEI HYIE
Dr.

Universiti Teknologi MARA, MALAYSIA

Title of Invited Talk: Corrosion study of heat treated nanocrystalline CoNiFe coating exposed in sodium solution.

GENERAL PROGRAMME SCHEDULE

	Monday, 16 November 2015				
	Time / Venue	**Andaman Grand Ballroom**	**Jintan Room**	**Lawang Room**	**Pala Room**
Registration (08:00- 16:00)	09:00 - 10:40	**Parallel Session 1A Invited Talk**	**Parallel Session 1B Invited Talk**	**Parallel Session 1C**	**Parallel Session 1D**
	10:40 - 11:00	Coffee Break			
	11:00 - 11:15	**Doa' Recitation & Welcoming Remark** Andaman Grand Ballroom			
	11:15 - 11:45	**Keynote Speech** - Assoc. Prof. Dr. Talib Ria Jaafar *Chairperson: Prof. Dr. Che Hassan Bin Che Haron* Andaman Grand Ballroom			
	11:45 - 12:15	**Keynote Speech** - Prof. Dr. Michael M. Khonsari *Chairperson: Prof. Dr. Che Hassan Bin Che Haron* Andaman Grand Ballroom			
	12:15 - 12:30	**Group Photo Session**			
	12:30 - 14:00	Lunch Break			
	Time / Venue	**Pandan Room**	**Jintan Room**	**Lawang Room**	**Pala Room**
	14:00 - 15:55	**Parallel Session 2A Invited Talk**	**Parallel Session 2B Invited Talk**	**Parallel Session 2C Invited Talk**	**Parallel Session 2D Invited Talk**
	15:55 - 16:15	Coffee Break			
	Time / Venue	**Pandan Room**	**Jintan Room**	**Lawang Room**	**Pala Room**
	16:15 - 18:10	**Parallel Session 3A Invited Talk**	**Parallel Session 3B Invited Talk**	**Parallel Session 3C**	**Parallel Session 3D**
	20:00 - 22:30	**Opening Ceremony & Conference Dinner** Andaman Grand Ballroom			
	Tuesday, 17 November 2015				
	Time / Venue	**Andaman Grand Ballroom**	**Jintan Room**	**Lawang Room**	**Pala Room**
Registration (08:00- 15:00)	08:45 - 10:40	**Parallel Session 4A Invited Talk**	**Parallel Session 4B**	**Parallel Session 4C Invited Talk**	**Parallel Session 4D Invited Talk**
	10:40 - 11:00	Coffee Break			
	11:00 - 11:30	**Keynote Speech** - Prof. Dr. Mohamed El-Mansori *Chairperson: Prof. Dr. Salmiah Kasolang* Andaman Grand Ballroom			
	11:30 - 12:00	**Keynote Speech** - Prof. Dr. Takahisa Kato *Chairperson: Prof. Dr. Salmiah Kasolang* Andaman Grand Ballroom			
	12:00 - 14:00	Lunch Break			
	Time / Venue	**Andaman Grand Ballroom**	**Jintan Room**	**Lawang Room**	**Pala Room**
	14:00 - 16:10	**Parallel Session 5A Invited Talk**	**Parallel Session 5B Invited Talk**	**Parallel Session 5C Invited Talk**	**Parallel Session 5D**
	16:10 - 16:30	Coffee Break & End of Conference			
	16:30 - 18:30	**MYTRIBOS Annual General Meeting** Jintan Room			

PRESENTATION SCHEDULE

P1A

THEME : Fuels, Lubricants and Lubrication A
DATE / DAY : 16 November 2015 (Monday)
TIME : 09:00 - 10:40
VENUE : Andaman Grand Ballroom
CHAIRPERSON : Prof. Dr. Seock-Sam Kim (Universiti Malaysia Sabah, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
09:00	#93	**Numerical investigation of the combined effects of slip and texture on tribological performance of bearing** Susilowati, M. Tauviqirrahman, J. Jamari, A.P. Bayuseno	Dr. Mohammad Tauviqirrahman	Diponegoro University, INDONESIA
09:15	#42	**Study of graphene nanolubricant using thermogravimetric analysis** A.K. Rasheed, M. Khalid, W. Rashmi, T.C.S.M. Gupta, A. Chan	Mr. Abdul Khaliq Rasheed	University of Nottingham, MALAYSIA
09:30	#153 Invited Speaker	**Effect of surface texturing on friction coefficient between aluminum and alloy tool steel under lubricated sliding contact** N. Nuraliza, S. Syahrullail	Assoc. Prof. Dr. Syahrullail Samion	Universiti Teknologi Malaysia, MALAYSIA
09:55	#168	**New oil condition monitoring system, WearSens® enables continuous, online detection of critical operating conditions and wear damage** Manfred Mauntz, Ulrich Kuipers, Jörn Peuser	Dr.-Ing. Manfred Mauntz	cmc Instruments GmbH, GERMANY
10:10	#111	**Development of Otto-ATR Raman spectroscopy for thin lubricant films** S. Yada, S. Maegawa, F. Itoigawa, T. Nakamura	Mr. Sho Yada	Nagoya Institute of Technology, JAPAN
10:25	#113	**SPR microscopy with ATR Otto configuration for observing thin boundary lubrication films** J. Yamaguchi, S. Maegawa, F. Itoigawa, T. Nakamura	Mr. Junya Yamaguchi	Nagoya Institute of Technology, JAPAN

P1B

THEME : Fuels, Lubricants and Lubrication B
DATE / DAY : 16 November 2015 (Monday)
TIME : 09:00 - 10:40
VENUE : Jintan Room
CHAIRPERSON : Assoc. Prof. Dr. Willey Liew Yun Hsien (University Malaysia Sabah, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
09:00	#92	**Effects of fuel additive to the fuel economy and emission in gasoline engine** N.R. Abdullah, A.R. Asiah, A.J. Helmisyah, Z. Michael, M.A. Ahmad	Mrs. Asiah Ab.Rahim	Universiti Teknologi MARA, MALAYSIA
09:15	#139	**Mechanism for increase in EHL oil film thickness by formation of sub-micrometer downsteps beside contact point** H. Ishihara, T. Hirayama, T. Matsuoka	Mr. Hiroki Ishihara	Doshisha University, JAPAN
09:30	#178 Invited Speaker	**Tribological impact of CI engine piston rings under different blend ratio biodiesel** N. Tamaldin, M.F.B. Abdollah, H. Amiruddin, M.A. Abdullah, M.T. Taib	Assoc. Prof. Dr. Noreffendy Tamaldin	Universiti Teknikal Malaysia Melaka, MALAYSIA
09:55	#35	**Investigation of Demnum-based PFPE lubricant thickness tendency with mixture of additive on magnetic hard disk head-disk interface (HDI) tribological performance** Y.H. Ooi, Y. Y. Por, A. Khairul, S.P. Yeap, N. Kazuo, W.L. Ng	Mr. Ooi Yew Hong	Fuji Electric (Malaysia) Sdn. Bhd., MALAYSIA
10:10	#49	**Hydrodynamic lubrication of surface textured lubricated contacts with boundary slip using CFD** M. Tauviqirrahman, Muchammad, A.W. Pratomo, J. Jamari, D.J. Schipper	Dr. Mohammad Tauviqirrahman	Diponegoro University, INDONESIA
10:25	#52	**Numerical investigation of pocketed slip slider bearing with non-Newtonian lubricant** A.W. Pratomo, Muchammad, M. Tauviqirrahman, J. Jamari, A.P. Bayuseno	Dr. Mohammad Tauviqirrahman	Diponegoro University, INDONESIA

P1C

THEME : Fuels, Lubricants and Lubrication C
DATE / DAY : 16 November 2015 (Monday)
TIME : 09:00 - 10:30
VENUE : Lawang Room
CHAIRPERSON : Prof. Dr. Kanao Fukuda (Malaysia-Japan International Institute of Technology, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
09:00	#183	**Analyses of various viscosity effects to hydrodynamic lubrication in tube spinning process** I. Nawi, B.A.M. Zain, W.A. Siswanto, N. Jaffery, H. Wahab	Dr. Ismail Nawi	Universiti Tun Hussein Onn Malaysia, MALAYSIA
09:15	#140	**Rheological property of boundary layer formed by oiliness additive evaluated by a new rheometer with narrow clearance** S. Shibata, Y. Hashimoto, T. Hirayama, T. Matsuoka	Mr. Shun Shibata	Doshisha University, JAPAN
09:30	#27	**Experimental analysis of antiwear property of 460cSt industrial mineral gear oil with MWCNT and ZnO nanoparticles using pin-on-disc apparatus** Shubrajit Bhaumik, S.D. Pathak	Mr. Shubrajit Bhaumik	SRM University, INDIA
09:45	#101	**Effect of lubricants and thermal resistance filler on the pressure and speed sensitivity characteristics of non-asbestos low metallic disc brake pad formulation** M. Rahul Ragh, R. Vijay, Arvind Venkatramani, D. Lenin Singaravelu	Mr. Rahul Ragh M	National Institute of Technology Tiruchirappalli, INDIA
10:00	#122	**Compensated hole-entry hybrid journal bearing by CFV restrictor under micropolar lubricants** Nathi Ram, Satish C. Sharma, Arvind Rajput	Dr. Nathi Ram	Indira Gandhi Delhi Technical University for Women, INDIA
10:15	#154	**Effects of fuel additive quantity on fuel consumption and CO emissions of a 1.6L gasoline engine fueled with RON97** N.R. Abdullah, Muhammad Hanif Mat, Aman Mohd Ihsan Mamat, Idris Saad, Muhammad Faiz Mat	Assoc. Prof. Dr. Nik Rosli Nik Abdullah	Universiti Teknologi MARA, MALAYSIA

P1D

THEME : Friction and Wear A
DATE / DAY : 16 November 2015 (Monday)
TIME : 09:00 - 10:30
VENUE : Pala Room
CHAIRPERSON : Dr. Xingrui Deng (Nagoya University, JAPAN)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
09:00	#22	**Wear characteristics of thixoforming hypoeutectic Al-Si-Cu alloy with Mg addition** K.S. Alhawari, M.Z. Omar, M.J. Ghazali, M.S. Salleh, M.N. Mohammed	Mr. Khaled Alhawari	Universiti Kebangsaan Malaysia, MALAYSIA
09:15	#30	**Effect of the particle angularity on friction coefficients and grit embedment of brake pad material** M.K. Abdul Hamid, A.R. Abu Bakar	Dr. Mohd Kameil Abdul Hamid	Universiti Teknologi Malaysia, MALAYSIA
09:30	#41	**Dry sliding wear of recycled carbon fiber reinforced epoxy composites** Q. Ahsan, M.L. Law, R. Farahiyan, N. Mohamad, H. Effendy, Sivarao	Prof. Dr. Qumrul Ahsan	Universiti Teknikal Malaysia Melaka, MALAYSIA
09:45	#62	**Sliding wear behavior of electro-carburized low carbon steel at high speed** J.L.J. Ling, W.Y.H. Liew, N.J. Siambun	Mr. Jester Ling Lih Jie	Universiti Malaysia Sabah, MALAYSIA
10:00	#39	**Influence of temperature on galling resistance of SS 416** A.P. Harsha, P.K. Limaye	Prof. Dr. A.P. Harsha	Indian Institute of Technology (BHU) Varanasi, INDIA
10:15	#117	**The challenge of temperature measurement in tribology experiments** T.C. Yap, K.O. Low, M.N. Ervina Efzan	Dr. Yap Tze Chuen	Multimedia University, MALAYSIA

P2A

THEME : Green Tribology A
DATE / DAY : 16 November 2015 (Monday)
TIME : 14:00 - 15:55
VENUE : Pandan Room
CHAIRPERSON : Prof. Dr. Satish Vasu Kailas (Indian Institute of Science, INDIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#116	**Development of a versatile mechanical property testing platform** Wanxin Sun	Dr. Wanxin Sun	Bruker Singapore Pte Ltd, SINGAPORE
14:15	#161	**Innovision in ecotribology: Biomimetic approaches** I.C. Gebeshuber	Prof. Dr. Ille C. Gebeshuber	Vienna University of Technology, AUSTRIA
14:30	#9 Invited Speaker	**Tribological aspects of wind and water power plants** Wilfried J. Bartz	Prof. Dr. Wilfried J. Bartz	Technische Akademie Esslingen, GERMANY
14:55	#37	**Non-edible palm oil: Alternative to mineral based lubricant in metal forming process** M.A. Nurul, S. Syahrullail, D.M. Razak	Miss Nurul Aini Mohd. Ahyan	Universiti Teknologi Malaysia, MALAYSIA
15:10	#156	**EDS analysis of tribofilm formed on self-mated stainless steel lubricated by palm biodiesel** Z. Fuadi, T. Takeno, K. Adachi, M. Tadjuddin	Dr. Zahrul Fuadi	Syiah Kuala University, INDONESIA
15:25	#34	**AW/EP behavior of WS_2 nanoparticles added to vegetable oil-based lubricant** M. Gulzar, H.H Masjuki, M. Varman, M.A. Kalam, R.A. Mufti, Rehan Zahid, R. Yunus	Mr. Mubashir Gulzar	University of Malaya, MALAYSIA
15.40	#160	**Tool condition monitoring in milling using sensor fusion technique** S. Shankar, T. Mohanraj	Dr. S. Shankar	Kongu Engineering College, INDIA

P2B

THEME : Green Tribology B
DATE / DAY : 16 November 2015 (Monday)
TIME : 14:00 - 15:55
VENUE : Jintan Room
CHAIRPERSON : Dr. Matthijn de Rooij (University of Twente, THE NETHERLANDS)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#105	**Comparison of physical and tribological properties of coconut oils extracted from dry and wet processing** D. Gasni, I. H. Mulyadi, Jon Affi	Dr. Dedison Gasni	Andals University, INDONESIA
14:15	#103	**Addition of ZDDP in corn oil as lubricant physical property improver** N.R. Mat Nuri, Q.N. Suffian, M.F.H.M. Saroji, M.A. Azhari	Mr. Mohd Farizzul Hakim Mohd Saroji	Universiti Teknikal Malaysia Melaka, MALAYSIA
14:30	#179 Invited Speaker	**Nature inspired design in tribology** M.J. Ghazali, H.A. Hassan, J.A. Wahab	Assoc. Prof. Dr. Mariyam Jameelah Ghazali	Universiti Kebangsaan Malaysia, MALAYSIA
14:55	#104	**Preliminary studies on physical property of canola oil + ZDDP as bio-lubricant** M.A. Azhari, S.H. Zainal, M.F.H.M. Saroji, N.R. Mat Nuri	Mr. Muhamad Azwar Azhari	Universiti Teknikal Malaysia Melaka, MALAYSIA
15:10	#45	**Comparison of tribological performance of zinc dialkyldithiophosphate (ZDDP) in poly-alpha-olefin (PAO) and palm oil-based trimethylopropane (TMP) ester** Rehan Zahid, H.H. Masjuki, Mahendra Varman, R.A. Mufti, Md. Abul Kalam, Mubashir Gulzar, R. Yunus	Mr. Rehan Zahid	University of Malaya, MALAYSIA
15:25	#175	**Structural properties of graphene from green carbon source via Thermal Chemical Vapour Deposition (CVD)** M.J. Salifairus, S.B. Abd Hamid, T. Soga, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop	Mr. Salifairus Mohammad Jafar	Universiti Teknologi MARA, MALAYSIA
15.40	#99	**Friction and wear characteristics of recycled aerocomposite carbon fibre reinforced polypropylene composites** A.A. Latiff, N. Mohamad, A.R. Jeefferie, M.H.M. Nasir, S. Siti Rahmah, M.A. Mahamood, M.I.H.C. Abdullah, M.F.B. Abdollah	Miss Anisah Abd Latiff	Universiti Teknikal Malaysia Melaka, MALAYSIA

P2C

THEME : Green Tribology C
DATE / DAY : 16 November 2015 (Monday)
TIME : 14:00 - 15:55
VENUE : Lawang Room
CHAIRPERSON : Dr. Alan Hase (Saitama Institute of Technology, JAPAN)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#50	**Cost evaluation on PVD coating during end milling of Inconel 718 under MQL condition** M.S. Kasim, C.H. Che Haron, J.A. Ghani, M.A. Hadi, M.A. Ali, R. Izamshah, M. Minhat, T.J.S Anand, T. Ito	Dr. Mohd Shahir Kasim	Universiti Teknikal Malaysia Melaka, MALAYSIA
14:15	#43	**Tribology characteristic of hBN particle as an additive in modified jatropha oil as a sustainable metalworking fluids** N. Talib, R. Md. Nasir, E.A. Rahim	Miss Norfazillah Talib	Universiti Tun Hussein Onn Malaysia, MALAYSIA
14:30	#68 Invited Speaker	**Power generation and blade turbine erosion** Mohammed Rahmani	Mr. Mohammed Rahmani	ALGERIA
14:55	#174	**Characterized and toxicity study of carbon nanotubes synthesis from fermented tapioca for tribological applications** I. Nurulhuda, R. Poh, M.Z. Mazatulikhma, M. Rusop	Mrs. Nurulhuda Ismail	Universiti Teknologi MARA, MALAYSIA
15:10	#89	**Tribological performance of raw and chemically modified RBD palm kernel** A.N. Farhanah, S. Syahrullail, N. Sapawe	Miss Nurul Farhanah Azman	Universiti Teknologi Malaysia, MALAYSIA
15:25	#77	**Graphene nanoplatelets in bio-based lubricant** S.S.N. Azman, N.W.M. Zulkifli, H.H. Masjuki	Mrs. Siti Safiyah Nor Azman	University of Malaya, MALAYSIA
15.40	#94	**The feasibility study of $CaCO_3$ derived from cockleshell as nanoparticle in chemically modified lubricant** N.A. Zainal, N.W.M. Zulkifli, M. Yusoff , H.H. Masjuki, R. Yunus	Miss Nurul Adzlin Zainal	University of Malaya, MALAYSIA

P2D

THEME : Surface, Coatings and Interface A
DATE / DAY : 16 November 2015 (Monday)
TIME : 14:00 - 15:55
VENUE : Pala Room
CHAIRPERSON : Dr. Abreeza Noorlina Abd. Manap (Universiti Tenaga National, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#63	**Influences of carbon content within TiC_xN_{1-x} coating to adhesivity onto tungsten carbide substrate** P.C. Siow, J.A. Ghani, C.H. Che Haron, M.J. Ghazali, T.R. Jaafar	Mr. Siow Ping Chuan	Universiti Kebangsaan Malaysia, MALAYSIA
14:15	#59	**Clarification the effects of oxygen to carbon ratio on wear mechanism of diamond-like carbon under pressurized hot water** M.Z.M. Rody, K. Okuno, N. Umehara, N. Inayoshi, K. Sasaki, S. Kawara, H. Kousaka, X. Deng	Mr. Mohd Rody Mohamad Zin	Nagoya University, JAPAN
14:30	#21 Invited Speaker	**Corrosion study of heat treated nanocrystalline CoNiFe coating exposed in sodium solution** Nor Azrina Resali, Koay Mei Hyie, M.N. Berhan, N.R. Nik Roselina, C.M. Mardziah, Zuraidah Salleh	Dr. Koay Mei Hyie	Universiti Teknologi MARA, MALAYSIA
14:55	#61	**Diamond like carbon deposition process optimization for media disk corrosion performance** W.S. Khoo, R. Md. Nasir, M.R. Zaidi, W.L. Ng	Mr. Khoo Wee Shen	Fuji Electric (Malaysia) Sdn. Bhd., MALAYSIA
15:10	#56	**Theoretical investigation of texture depth effect on the lubrication performance in slip pocketed bearing including cavitation** Muchammad, M. Tauviqirrahman, A.W. Pratomo, J. Jamari, D.J. Schipper	Dr. Mohammad Tauviqirrahman	Diponegoro University, INDONESIA
15:25	#150	**Tribological properties of polymer overlay coated on the micro-textured metal substrate** J. Ishihara, Y. Horiba, K. Enomoto, H. Usami	Mr. Jukyou Ishihara	Meijo Universty, JAPAN
15.40	#95	**A study on effect of laser textured cast iron surfaces on reducing friction and wear** N.A.M. Lazim, S.E.M. Kamal, R. Hasan	Miss Nurul Atiqah Mohd Lazim	Universiti Teknikal Malaysia Melaka, MALAYSIA

P3A

THEME : Biotribology
DATE / DAY : 16 November 2015 (Monday)
TIME : 16:15 - 18:10
VENUE : Pandan Room
CHAIRPERSON : Prof. Dr. Ille C. Gebeshuber (Vienna University of Technology, AUSTRIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
16:15	#60	**Study on the biocompatibility and wear of stainless steel 316L and UHMWPE materials** I.B. Anwar, E. Saputra, R. Ismail, J. Jamari, E. van der Heide	Mr. Iwan Budiwan Anwar	University of Twente, THE NETHERLANDS
16:30	#58	**The effect of the wear rate on impingement failure confirming the relation between impingement failure and wear of the acetabular liner surface based on finite element simulation** E. Saputra, I.B. Anwar, R. Ismail, J. Jamari, E. van der Heide	Mr. Eko Saputra	University of Twente, THE NETHERLANDS
16:45	#159 Invited Speaker	**Adsorption and friction of Mussel Adhesive Protein (MAP) films under polarization** G.X. Xie, F. Zhang, J.S. Pan	Assoc. Prof. Dr. Guoxin Xie	Tsinghua University, PR CHINA
17:10	#112	**Characteristics of regenerated cartilage tissue cultured under traction loading** K. Fukuda, S. Omata, T. Yamaguchi, Y. Sawae	Mr. Keisuke Fukuda	Kyushu University, JAPAN
17:25	#47	**Measuring human hair friction with a crossed fibres test setup** V. Krasmik, J. Schlattmann	Mr. Viktor Krasmik	Hamburg University of Technology, GERMANY
17:40	#16	**Effect of radial and thickness of polyethylene on wear generation in total ankle replacement** A.M.S. Putra, M.N. Harun, Ardiyansyah Syahrom, M.R. Abdul Kadir	Mr. Amir Putra Md Saad	Universiti Teknologi Malaysia, MALAYSIA
17:55	#17	**The influence of peg designs on glenoid component: A finite element study** A.W.A. Hadi, M.R.A. Kadir, M.N. Harun, A. Syahrom	Mr. Abdul Hadi Abdul Wahab	Universiti Teknologi Malaysia, MALAYSIA

P3B

THEME : Surface, Coatings and Interface B
DATE / DAY : 16 November 2015 (Monday)
TIME : 16:15 - 18:10
VENUE : Jintan Room
CHAIRPERSON : Prof. Dr. Hatsuhiko Usami (Meijo University, JAPAN)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
16:15	#166	**Hybrid bilayer structure $PbTiO_3$/PVDF-TrFE prepared by spin coating method for capacitor applications** Nurbaya Zainal, M.H. Wahid, Rozana Dahan, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop	Miss Nurbaya Zainal	Universiti Teknologi MARA, MALAYSIA
16:30	#136	**Tribological study of nanoporous amorphous boron carbide film prepared by pulsed plasma CVD** S. Liza, N. Ohtake, H. Akasaka, J.M. Munoz-Guijosa, H.H. Masjuki	Dr. Shahira Liza Kamis	Tokyo Institute of Technology, JAPAN
16:45	#133 Invited speaker	**High speed and large area coating of tetrahedral amorphous carbon with filtered multi cathode vacuum arc plasma system** Young-Jun Jang, Yong Jin Kim, Gi Taek Kim, Yong Jin Kang, Jong-kuk Kim, Seock-Sam Kim	Dr. Young-Jun Jang	Korea Institute of Material Science, SOUTH KOREA
17:10	#167	**Investigation of ZnO nanotetrapods at different evaporation temperature prepared by thermal-CVD method for OLED applications** N.E.A. Azhar, S.S. Shariffudin, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop	Miss Najwa Ezira Ahmed Azhar	Universiti Teknologi MARA, MALAYSIA
17:25	#18	**Characteristics of PVD CrAlN thin film on Al-Si piston alloy** Q.M. Mehran, A.R. Bushroa, M.A. Fazal	Mr. Muhammad Mehran Qadir	University of Malaya, MALAYSIA
17:40	#87	**Characterisation of surface modification on titanium alloys for dental implant application** A. Jemat, M.J. Ghazali, M. Razali, Y. Otsuka	Mrs. Afida Jemat	Universiti Kebangsaan Malaysia, MALAYSIA
17:55	#84	**Preparation and characterization of TIG-alloyed hybrid composite coatings for high temperature solid lubrication** K.A. Bello, M.A. Maleque, Z. Ahmad, A.A. Adebisi, S. Mirdha	Mr. Kamilu Adeyemi Bello	International Islamic University Malaysia, MALAYSIA

P3C

THEME : Contact Mechanics A
DATE / DAY : 16 November 2015 (Monday)
TIME : 16:15 - 18:00
VENUE : Lawang Room
CHAIRPERSON : Dr. Mimi Azlina Abu Bakar (Universiti Teknologi MARA, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
16:15	#51	**Plastic deformation in running-in of rolling contact** N.F. Mohd Yusof, Z.M. Ripin	Mrs. Nurul Farhana Mohd Yusof	Universiti Sains Malaysia, MALAYSIA
16:30	#108	**Stick-slip motions of polymer gels having multiple artificial asperities** T. Yamaguchi, Y. Himeno, Y. Sawae	Prof. Dr. Tetsuo Yamaguchi	Kyushu University, JAPAN
16:45	#71	**Effects of drop height and damper thickness on shock output optimization for hard disk drive reliability** C.K. Low, M. Jamil, M. Azrul, C.H. Tan, N. Kazuo, W.L. Ng, Watanabe Takeshi, M. Ridwan, M. Ridzwan	Mr. Low Chee Keong	Fuji Electric (Malaysia) Sdn. Bhd., MALAYSIA
17:00	#114	**Novel design concept for Rayleigh step bearing with high robustness against step height change due to frictional wear** Shunsuke Mori, Satoru Maegawa, Fumihiro Itoigawa, Takashi Nakamura	Mr. Shunsuke Mori	Nagoya Institute of Technology, JAPAN
17:15	#162	**Theoretical groundwork: An extension to the double Hertz model for adhesion between elastic cylinders** N.H.M. Zini, M.B. de Rooij, N. Ismail, D.J. Schipper, A. Akchurin	Mrs. Nurul Hilwa Mohd Zini	University of Twente, THE NETHERLANDS
17:30	#78	**Effect of geometry on the plastic contact between two hemispheres** J. Jamari, E. Saputra, R. Ismail, M. Tauviqirrahman, D.J. Schipper	Dr. Rifky Ismail	Diponegoro University, INDONESIA
17:45	#76	**Running-in of an artificial rough rolling-sliding contact using finite element analysis** R. Ismail, E. Saputra, J. Jamari, D.J. Schipper	Dr. Rifky Ismail	Diponegoro University, INDONESIA

P3D

THEME : Bearing Design and Technology
DATE / DAY : 16 November 2015 (Monday)
TIME : 16:15 - 18:00
VENUE : Pala Room
CHAIRPERSON : Dr. Mohd Kameil Abdul Hamid (Universiti Teknologi Malaysia, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
16:15	#12	**Stability of double porous and surface porous layer journal bearing** T.V.V.L.N. Rao, A.M.A. Rani, M. Awang, T. Nagarajan, F.M. Hashim	Assoc. Prof. Dr. T V V L N Rao	Universiti Teknologi PETRONAS, MALAYSIA
16:30	#40	**3D surface roughness effects on porous journal bearing performances** Mohammedrafi H. Kerur, T. Nagaraju	Mr. Mohammedrafi H Kerur	P.E.S. College of Engineering, INDIA
16:45	#80	**Problems of rolling bearing life in small turbojet engines** Boleslaw Giemza, Pawel Jozwik	Mr. Boleslaw Giemza	Air Force Institute of Technology, POLAND
17:00	#85	**Surface roughness and fluid inertia effects on non-Newtonian THD performances of a journal bearing** T. Nagaraju, E. Sujith Prasad	Prof. Dr. Tirumalesh Nagaraju	P.E.S. College of Engineering, INDIA
17:15	#146	**Reusable sounding rocket engine and it's tribological subjects** M. Yoshida, S. Takada, T. Hashimoto, M. Sato, T. Kimura	Dr. Makoto Yoshida	Japan Aerospace Exploration Agency, JAPAN
17:30	#124	**Effect of orientation of pocket on the performance of geometrically irregular hybrid journal bearing** Arvind K. Rajput, Satish C. Sharma, Nathi Ram	Dr. Arvind Kumar Rajput	Shiv Nadar University, INDIA
17:45	#79	**Effect of dimensional tolerances on the performance of hybrid bearing** K.P. Lijesh, H. Hirani	Prof. Dr. H. Hirani	Indian Institute of Technology Delhi, INDIA

P4A

THEME : Friction and Wear B
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 08:45 - 10:40
VENUE : Andaman Grand Ballroom
CHAIRPERSON : Prof. Dr.-Ing. Josef Schlattmann (Hamburg University of Technology, GERMANY)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
08:45	#69	**Reciprocating wear of mild steel carburized using Na_2CO_3-NaCl** W.Y.H. Liew, Roonie Protasius, J.L.J. Ling, N.J. Siambun, Noor-Ajian Mohd-Lair	Assoc. Prof. Dr. Willey Liew Yun Hsien	University Malaysia Sabah, MALAYSIA
09:00	#164	**Effect of strain rate response and pin diameter on mechanically mixed layer formation and wear mechanisms in a Ti6Al4V – SS316L pair** Ashok Raj J., Satish V. Kailas	Prof. Dr. Satish Vasu Kailas	Indian Institute of Science, INDIA
09:15	#158 Invited Speaker	**Status and developments in tribology of polymer composites** A.K. Schlarb	Prof. Dr.-Ing. Alois K. Schlarb	University of Kaiserslautern, GERMANY
09:40	#75	**Effect of humidity on limiting friction: An experimental investigation** K.S. Pondicherry, F. Wolf, G. Krenn	Dr. Kartik S. Pondicherry	Anton Paar GmbH, AUSTRIA
09:55	#132	**Severe-mild wear transition at different relative humidity rates** K. Fukuda, T. Morita	Prof. Dr. Kanao Fukuda	Malaysia-Japan International Institute of Technology, MALAYSIA
10:10	#121	**Effects of oxidative degradation on the wear and wear particles of cross-linked UHMWPE** L. Zhang, Y. Sawae, T. Murakami, T. Yamaguchi	Prof. Dr. Yoshinori Sawae	Kyushu University, JAPAN
10:25	#186	**Control of tribological properties by multi-scale surface texturing** Shinya Sasaki	Prof. Dr. Shinya Sasaki	Tokyo University of Science, JAPAN

P4B

THEME : Friction and Wear C
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 08:45 - 10:40
VENUE : Jintan Room
CHAIRPERSON : Dr. Ismail Nawi (Universiti Tun Hussein Onn Malaysia, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
08:45	#134	**Wear characteristics of a combustion liner for power generation gas turbine** Ahmad Afiq Pauzi, Mariyam Jameelah Ghazali, Wan Fathul Hakim W. Zamri, Salmi Mohd Yunus, Shuib Husin	Mr. Ahmad Afiq Pauzi	TNB Research Sdn. Bhd., MALAYSIA
09:00	#81	**Detection of wear transition using change in frequency of AE signals** Alan Hase, Yota Takemura, Hiroshi Mishina	Dr. Alan Hase	Saitama Institute of Technology, JAPAN
09:15	#151	**Wear prediction of die coating in strip ironing by Finite Element simulation** Numchoak Sabangban, Sasawat Mahabunphachai, Sedthawatt Sucharitpwatskul, Numpon Mahayotsanun	Dr. Sasawat Mahabunphachai	National Metal and Materials Technology Center, THAILAND
09:30	#64	**The characteristics of the fretting wear of Inconel738LC and CM247LC according to the roughness change** Kyoung-Sup Kum, Young-Ze Lee	Mr. Kyoung-Sup Kum	Kyun Kwan University, SOUTH KOREA
09:45	#177	**Influence of single and multiple particle size variation on mechanical and wear behaviour of aluminium silicon carbide composites** A.A. Adebisi, M.A. Maleque, M.Y. Ali, K.A. Bello	Mr. Adebisi Adetayo Abdulmumin	International Islamic University Malaysia, MALAYSIA
10:00	#96	**Dry sliding wear behavior of Al-SiO_2 composites** S. Mohan, Gaurav Gautam, Narendra Kumar, R.K. Gautam, A. Mohan, Ashish. Kr. Jaiswal	Prof. Dr. Sunil Mohan	Indian Institute of Technology (BHU) Varanasi, INDIA
10:15	#97	**Synthesis and tribological properties of AA5052 base insitu composites** Gaurav Gautam, Narendra Kumar, Anita Mohan, Sunil Mohan, R.K. Gautam	Dr. Anita Mohan	Indian Institute of Technology (BHU) Varanasi, INDIA

P4C

THEME : Friction and Wear D
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 08:45 - 10:40
VENUE : Lawang Room
CHAIRPERSON : Dr. Zahrul Fuadi (Syiah Kuala University, INDONESIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
08:45	#46	**Dry sliding wear of in-situ synthesized Al-TiC composites** Abhishek Kumar, Rakesh K. Gautam, Rajnesh Tyagi	Dr. Rajnesh Tyagi	Indian Institute of Technology (BHU) Varanasi, INDIA
09:00	#74	**Tribological behavior of Al based self-lubricating composites** Vineet Rajput, Rakesh K. Gautam, Rajnesh Tyagi	Dr. Rakesh Kumar Gautam	Indian Institute of Technology (BHU) Varanasi, INDIA
09:15	#6 Invited Speaker	**An integration using Taguchi/response surface method on wear and friction of stainless steel-pin-on-pure al block** R. Md. Nasir, D.W.J. Jan	Dr. Ramdziah Md. Nasir	Universiti Sains Malaysia, MALAYSIA
09:40	#125	**Effect of trace moisture content on friction of carbon fiber filled PTFE in high purity gas** H. Kojima, Y. Sawae, T. Morita, J. Sugimura	Mr. Hiroshi Kojima	Kyushu University, JAPAN
09:55	#53	**An investigation of hard-on-soft contact: For reducing friction in hemispherical cup** D.M. Razak, S. Syahrullail, M.A. Nurul, N. Nuraliza, Y. Azli	Mr. Md Razak Daud	Universiti Teknologi Malaysia, MALAYSIA
10:10	#142	**Kinetic and friction analyses of a preloaded double nut ball-screw** Chin-Chung Wei, Dong-Hao Xu	Mr. Dong-Hao Xu	National Formosa University, TAIWAN
10:25	#163	**Friction in fiber-fiber contact: An experimental setup** N. Ismail, E.G. de Vries, M.B. de Rooij, N.H.M. Zini, D.J. Schipper	Mrs. Nurhidayah Ismail	University of Twente, THE NETHERLANDS

P4D

THEME : Surface, Coatings and Interface C
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 08:45 - 10:40
VENUE : Pala Room
CHAIRPERSON : Assoc. Prof. Dr. T V V L N Rao (Universiti Malaysia PETRONAS, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
08:45	#170	**Sensing properties of nanostructured zinc oxide-based gas sensor fabricated using immersion method** A.K. Shafura, M.H. Mamat, M. Uzer, A. Shuhaimi, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop	Miss Siti Shafura A Karim	Universiti Teknologi MARA, MALAYSIA
09:00	#157	**Electroless Ni-P-Cu-CuO composite coatings on mildsteel with zwitterionic surfactant** R. Muraliraja, R. Elansezhian	Mr. Murali Raja	Pondicherry University, INDIA
09:15	#137 Invited Speaker	**Low friction property of carbon overcoat DLC under boundary lubrication** T. Tokoroyama	Assoc. Prof. Dr. Takayuki Tokoroyama	Akita University, JAPAN
09:40	#33	**Effect of surface texture on the tribological performance of DLC coating** A. Arslan, H.H. Masjuki, M. Varman, A. Kalam, R.A. Mufti, M. Gulzar, M.M. Quazi	Mr. Arslan Ahmed	University of Malaya, MALAYSIA
09:55	#110	**The effect of macro-rivet textures on tribological performances** M.N.A.M. Yusoff, H.H. Masjuki, N.W.M. Zulkifli	Mr. Mohd Nur Ashraf Mohd Yusoff	Universiti of Malaya, MALAYSIA
10:10	#14	**FEM analysis in identifying the turning parameters for dimple structure fabrication** Mohd Nor Azam Mohd Dali, Jaharah A. Ghani, Che Hassan Che Haron	Mr. Mohd Nor Azam Mohd Dali	Universiti Kebangsaan Malaysia, MALAYSIA
10:25	#67	**A study on powder-pack boronizing of 316 stainless-steel ball bearing** N.H. Omar, R. Hasan, N.A.B. Masripan	Miss Nurul Hidayah Omar	Universiti Teknikal Malaysia Melaka, MALAYSIA

P5A

THEME : Surface, Coatings and Interface D
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 14:00 - 16:10
VENUE : Andaman Grand Ballroom
CHAIRPERSON : Prof. Dr. Shinya Sasaki (Tokyo University of Science, JAPAN)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#130	**Improved cold sprayed CoNiCrAlY bond coat in thermal barrier coating** A. Manap, N.F. Afandi, S.N.A. Yusof	Dr. Abreeza Noorlina Abd. Manap	Universiti Tenaga National, MALAYSIA
14:15	#155	**Research on thermal stability of DLC by using in-situ Environmental Scanning Electron Microscope** X. Deng, H. Izuoka, H. Kousaka, N. Umehara	Dr. Xingrui Deng	Nagoya University, JAPAN
14:30	#165	**DLC coatings for cam follower applications: The role of the surface on tribochemical reactions, friction and wear** MacDonald Ofune, Liuquan Yang, Ardian Morina, Anne Neville	Prof. Dr. Anne Neville	University of Leeds, UNITED KINGDOM
14:45	#135 Invited Speaker	**New generation carbon coatings with monocrystalline structure as the promising new method of oil lubricity increasing** V. Levchenko, I. Buyanovsky, K. Zakharov, A. Bol'shakov, V. Matveenko	Prof. Dr. Vladimir Levchenko	Lomonosov Moscow State University, RUSSIA
15:10	#126	**Recent advances in non-contact metrology, high speed measurement, steep slope measurement and correlation with stylus data** M. Conroy, R. Burton, Y. Yu, T. Kumagi	Mr. Mike Conroy	Taylor Hobson Ltd., UNITED KINGDOM
15:25	#98	**Analysis of sliding contact temperature for roughness surface** S.Y. Chern, J.H. Horng, H.J. Tsai, C.H. Tsai	Prof. Dr. Jeng-Haur Horng	Nation Formosa University, TAIWAN
15:40	#127	**Hydrogen permeation into bearing steels under sliding** H. Tanaka, T. Komatsu, J. Sugimura	Prof. Dr. Joichi Sugimura	Kyushu University, JAPAN
15:55	#72	**Interconnect material preparation via milled and ultrasonically $Fe_{80}Cr_{20}$ alloy powder** A.M. Leman, I. Baba, B. Abu Bakar, R. Rahmad, D. Feriyanto, D. Sebayang	Assoc. Prof. Dr. Abdul Mutalib Leman	Universiti Tun Hussein Onn Malaysia, MALAYSIA

P5B

THEME : Surface, Coatings and Interface E
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 14:00 - 16:10
VENUE : Jintan Room
CHAIRPERSON : Prof. Dr. A.P. Harsha (Indian Institute of Technology (BHU) Varanasi, INDIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#109	**Characterization of thermal barrier coating on piston crown for high temperature internal combustion engine** Helmisyah Ahmad Jalaludin, Muhammad Akmal Fahmi Mohammad, Salmiah Kasolang, Shahrir Abdullah	Mr. Helmisyah Ahmad Jalaludin	Universiti Teknologi MARA, MALAYSIA
14:15	#131	**Tribological analysis of touch experience about various fabrics** M.S. Kim, Y.Z. Lee	Mr. Min-Seob Kim	Sungkyunkwan University, SOUTH KOREA
14:30	#138	**Direct observation of adsorbed additive layer at solid-liquid interface by frequency-modulation atomic force microscopy** K. Fujino, R. Kawamura, T. Matsuoka, T. Hirayama, H. Onishi	Mr. Fujino Keita	Doshisha University, JAPAN
14:45	#147 Invited Speaker	**Evaluation of transformed layer of DLC coating after friction test using Atomic Force Microscopy (AFM)** N.A.B. Masripan, Y. Tsukiyama, K. Ohara, N. Umehara, H. Kousaka, T. Tokoroyama, S. Inami, K. Zushi, M. Fujita	Dr. Nor Azmmi Masripan	Universiti Teknikal Malaysia Melaka, MALAYSIA
15:10	#26	**Enhanced surface roughness of AISI D2 steel machined using nano-powder mixed electrical discharge machining** Houriyeh Marashi, Ahmed A.D. Sarhan, Ibrahem Maher, M. Sayuti, M. Hamdi	Miss Houriyeh Marashi	University of Malaya, MALAYSIA
15:25	#24	**Investigation into effect of silicon morphology on surface roughness while machining Al-Si-Cu-Mg alloy** M. Marani Barzani, A.A.D. Sarhan, S. Ramesh, I. Maher, S. Farahany	Mr. Mohsen Marani Barzani	University of Malaya, MALAYSIA
15:40	#123	**3D modeling of rough surface from the measurement data** Kartini, E. Saputra, R. Ismail, J. Jamari, A.P. Bayuseno	Dr. Rifky Ismail	Diponegoro University, INDONESIA
15:55	#25	**White layer thickness prediction in WEDM-ANFIS modelling** Ibrahem Maher, Ahmed A.D. Sarhan, Houriyeh Marashi, Mohsen Marani Barzani, M. Hamdi	Mr. Ibrahem Maher Abdelrahem Soltan	International Islamic University Malaysia, MALAYSIA

P5C

THEME : Surface, Coatings and Interface F
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 14:00 - 16:10
VENUE : Lawang Room
CHAIRPERSON : Dr. Nurin Wahidah Mohd Zulkifli (University of Malaya, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#188	**The development of ceramic fiber via sacrificial method** M.S. Sharmiwati, Z. Azmiza, S. Fazidah, M.H. Nuraida, H. Roshanizah	Dr. Sharmiwati Mohammed Sharif	Universiti Kuala Lumpur Malaysian Spanish Institute, MALAYSIA
14:15	#28	**Laser surface texturing on ceramic coating** Juyana A. Wahab, M. J. Ghazali, W.M.W. Yusoff, Z. Sajuri	Miss Juyana A. Wahab	Universiti Kebangsaan Malaysia, MALAYSIA
14:30	#66	**Surface roughness of AlSi/AlN metal matrix composite material using the Taguchi method** M.S. Said, J.A. Ghani, N.N Wan, C.H. Che Haron	Mrs. Nurul Na'imy Wan	UniKL Malaysian Spanish Institute, MALAYSIA
14:45	#181 Invited Speaker	**Performance analysis of thermal arc spray aluminium coating as a sacrificial anode and mechanical properties in artificial seawater** Nor Hayati Saad, Muhamad Hafiz Abd Malek, Sunhaji Kiyai Abas, Noriyati Md Shah	Assoc. Prof. Dr. Nor Hayati Saad	Universiti Teknologi MARA, MALAYSIA
15:10	#36	**Substrate temperature impact towards carbon overcoat properties and corrosion performance in magnetic recording media** Amalina Balqis, Mun-Sing Fan, M. Shapuan M. Yusop, W.S. Khoo, Lawrence Ng Wah, Kazuo Nimura	Miss Amalina Balqis Abu Bakar	Fuji Electric (Malaysia) Sdn. Bhd., MALAYSIA
15:25	#88	**Corrosion behavior and mechanical properties of duplex coating Ti6Al4V/TiAlBN** Yusliza Yusuf, Zulkifli Mohd. Rosli, Jariah Mohamad Juoi, Nooririnah Omar	Mrs. Yusliza Yusuf	Universiti Teknikal Malaysia Melaka, MALAYSIA
15:40	#171	**The effect of different molarity on TiO_2 solution prepared by sol-gel method** I.H.H. Affendi, M.S.P. Sarah, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop	Mrs. Irma Hidayanti Halim Affendi	Universiti Teknologi MARA, MALAYSIA
15:55	#169	**Artificial intelligence technique in solving nano-process parameter optimization problem** M.S. Norlina, M.S. Nor Diyana, P. Mazidah, M. Rusop	Mrs. Norlina Mohd Sabri	Universiti Teknologi MARA, MALAYSIA

P5D

THEME : Contact Mechanics B
DATE / DAY : 17 November 2015 (Tuesday)
TIME : 14:00 - 16:00
VENUE : Pala Room
CHAIRPERSON : Assoc. Prof. Dr. Aidah Jumahat (Universiti Teknologi MARA, MALAYSIA)

TIME	#ID	TITLE	PRESENTER	PRESENTER'S AFFILIATION
14:00	#54	**Finite element modeling of the contact between an insole shoe and a ballnose cutter milling** B. Bawono, P.W. Anggoro, J. Jamari, A.P. Bayuseno	Mr. Baju Bawono	Universitas Atma Jaya Yogyakarta, INDONESIA
14:15	#55	**A numerical investigation of mechanical behavior of unfilled styrene-butadiene rubber by static straight blade indentation** B. Setiyana, R. Ismail, J. Jamari, D.J. Schipper	Dr. Rifky Ismail	Diponegoro University, INDONESIA
14:30	#152	**Finite element analysis of a two layer viscoelastic material in contact with a flat punch** P.W. Angoro, B. Bawono, J. Jamari, A.P. Bayuseno	Mr. Paulus Wisnu Anggoro	Universitas Atma Jaya Yogyakarta, INDONESIA
14:45	#176	**The contact area of elastomers as a function of the sliding velocity** N.V. Rodriguez, M. Khafidh, M.A. Masen, D.J. Schipper	Mr. Muhammad Khafidh	University of Twente, THE NETHERLANDS
15:00	#145	**Effects of dispersed sulfides in bronze under line contact conditions** T. Sato, Y. Hirai, T. Fukui, K. Akiyama, H. Usami	Dr. Tomohiro Sato	Kansai University, JAPAN
15:15	#11	**Physical properties and energy absorption characteristic of open cell ENR/RR foam** M.A. Mahamood, N. Mohamad, A.R. Jeeffeerie, A.H.M. Zain, M.I. Shueb	Mrs. Mazlin Aida Mahmood	Universiti Teknikal Malaysia Melaka, MALAYSIA
15:30	#57	**Compressive properties and water contact behavior of opened-cell green rubber foam at different blowing agent concentration** N. Mohamad, M. Mazliah, Z. Nur Sharafina, M.N. Amirul Asyraf, M.F.B. Abdollah, A.M. Hairul Effendy	Miss Mazliah Mazlan	Universiti Teknikal Malaysia Melaka, MALAYSIA
15:45	#120	**Measurements of surface displacement field for multi-contact interface of elastomers** S. Maegawa, F. Itoigawa, T. Nakamura	Dr. Satoru Maegawa	Nagoya Institute of Technology, JAPAN

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ADDITIONAL INFORMATION

Time Zone	UTC/GMT/+8hours Kuala Lumpur
Average Temperature	High: 32°C, Low: 24°C

Prayer Times for Penang

DATE	DAY	IMSAK	SUBUH	SYURUK	ZUHUR	ASAR	MAGHRIB	ISYA'
14/11/2015	Sat	5:37	5:47	7:05	13:05	16:26	19:01	20:13
15/11/2015	Sun	5:37	5:47	7:05	13:05	16:27	19:01	20:13
16/11/2015	Mon	5:37	5:47	7:06	13:06	16:27	19:01	20:13
17/11/2015	Tue	5:38	5:48	7:06	13:06	16:27	19:01	20:14
18/11/2015	Wed	5:38	5:48	7:06	13:06	16:27	19:01	20:14
19/11/2015	Thu	5:38	5:48	7:06	13:06	16:28	19:01	20:14

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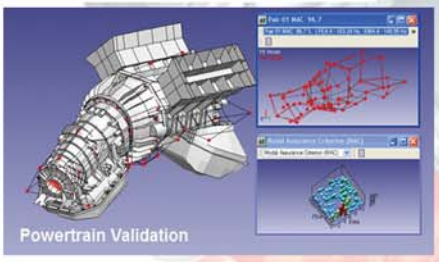

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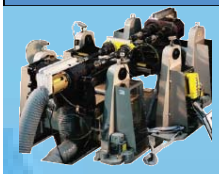





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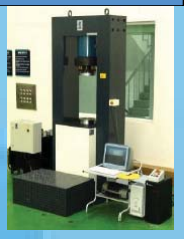







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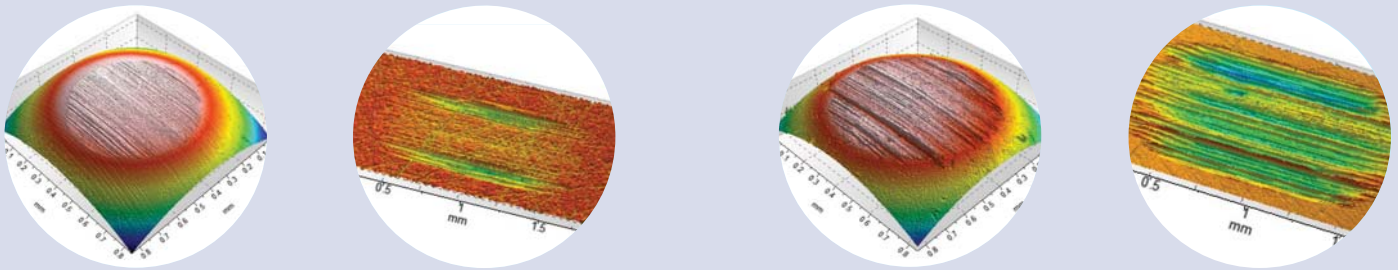

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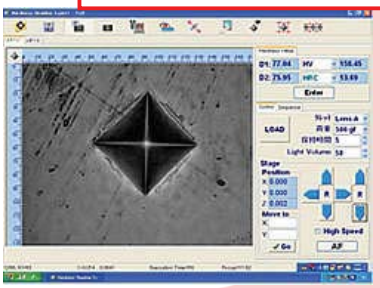

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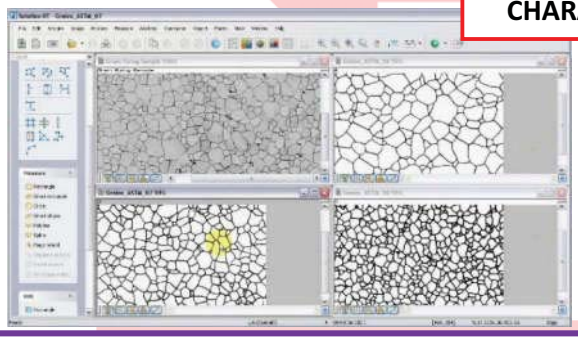

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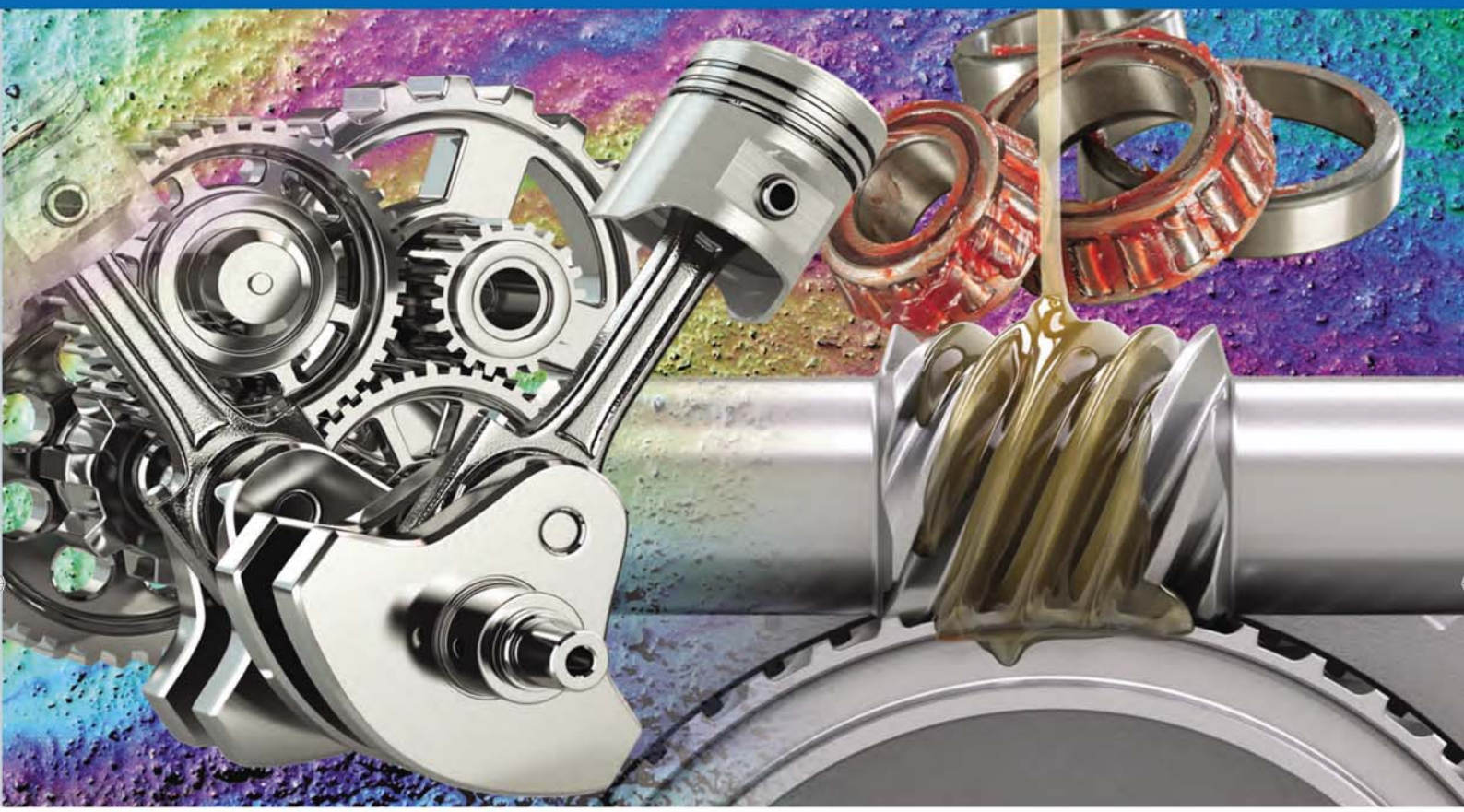

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