

TABLE OF CONTENTS

FOREWORD BY THE EDITORS-IN-CHIEF	ii
EDITORIAL BOARD	iii
REVIEWERS	iv
TABLE OF CONTENTS	vi

Keynote Speeches

001. Hard thin film coatings deposited by Cathodic Arc Physical Vapor Deposition technique. <i>R.J. Talib, M.F. Fazira, H.M. Ariff</i>	1
002. A unified approach for analysis of wear and fatigue. <i>Michael Khonsari</i>	2
003. Tribology issues in low-friction engine surface finishing. <i>M. El Mansori, S. Mezghani, I. Sabri</i>	3
004. Overlooking map of tribotechnology. <i>Takahisa Kato</i>	4

Invited Talks

005. Tribological aspects of wind and water power plants. <i>Wilfried J. Bartz</i>	6
006. New generation carbon coatings with monocrystalline structure as the promising new method of oil lubricity increasing. <i>V. Levchenko, I. Buyanovsky, K. Zakharov, A. Bol'shakov, V. Matveenko Thiru</i>	7
007. Status and developments in tribology of polymer composites. <i>A.K. Schlarb</i>	9
008. Nature inspired design in tribology. <i>M.J. Ghazali, H.A. Hassan, J.A. Wahab</i>	12
009. Low friction property of carbon overcoat DLC under boundary lubrication. <i>T. Tokoroyama</i>	14
010. Effect of surface texturing on friction coefficient between aluminum and alloy tool steel under lubricated sliding contact. <i>N. Nuraliza, S. Syahrullail</i>	17
011. Adsorption and friction of Mussel Adhesive Protein (MAP) films under polarization. <i>G.X. Xie, F. Zhang, J.S. Pan</i>	19

012.	Performance analysis of thermal arc spray aluminium coating as a sacrificial anode and mechanical properties in artificial seawater. <i>Nor Hayati Saad, Muhamad Hafiz Abd Malek, Sunhaji Kiyai Abas, Noriyati Md Shah</i>	21
013.	High speed and large area coating of tetrahedral amorphous carbon with filtered multi cathode vacuum arc plasma system. <i>Young-Jun Jang, Yong Jin Kim, Gi Taek Kim, Yong Jin Kang, Jong-kuk Kim, Seock-Sam Kim</i>	23
014.	Tribological impact of CI engine piston rings under different blend ratio biodiesel. <i>N. Tamaldin, M.F.B. Abdollah, H. Amiruddin, M.A. Abdullah, M.T. Taib</i>	25
015.	Wear prediction of die coating in strip ironing by Finite Element simulation. <i>Numchoak Sabangban, Sasawat Mahabunphachai, Sedthawatt Sucharitpwatskul, Numpon Mahayotsanun</i>	27
016.	An integration using Taguchi/response surface method on wear and friction of stainless steel-pin-on-pure al block. <i>R. Md. Nasir, D.W.J. Jan</i>	29
017.	Power generation and blade turbine erosion. <i>Mohammed Rahmani</i>	31
018.	Evaluation of transformed layer of DLC coating after friction test using Atomic Force Microscopy (AFM). <i>N.A.B. Masripan, Y. Tsukiyama, K. Ohara, N. Umehara, H. Kousaka, T. Tokoroyama, S. Inami, K. Zushi, M. Fujita</i>	32
019.	Corrosion study of heat treated nanocrystalline CoNiFe coating exposed in sodium solution. <i>Nor Azrina Resali, Koay Mei Hyie, M.N. Berhan, N.R. Nik Roselina, C.M. Mardziah, Zuraidah Salleh</i>	34

Theme 1: Bearing Design and Technology

020.	Stability of double porous and surface porous layer journal bearing. <i>T.V.V.L.N. Rao, A.M.A. Rani, M. Awang, T. Nagarajan, F.M. Hashim</i>	36
021.	3D surface roughness effects on porous journal bearing performances. <i>Mohammedrafi H. Kerur, T. Nagaraju</i>	38
022.	Effect of dimensional tolerances on the performance of hybrid bearing. <i>K.P. Lijesh, H. Hirani</i>	40
023.	Problems of rolling bearing life in small turbojet engines. <i>Boleslaw Giemza, Pawel Jozwik</i>	42
024.	Surface roughness and fluid inertia effects on non-Newtonian THD performances of a journal bearing. <i>T. Nagaraju, E. Sujith Prasad</i>	44

025.	Effect of orientation of pocket on the performance of geometrically irregular hybrid journal bearing. <i>Arvind K. Rajput, Satish C. Sharma, Nathi Ram</i>	46
026.	Reusable sounding rocket engine and it's tribological subjects. <i>M. Yoshida, S. Takada, T. Hashimoto, M. Sato, T. Kimura</i>	48

Theme 2: Biotribology

027.	Effect of radial and thickness of polyethylene on wear generation in total ankle replacement. <i>A.A.M.S. Putra, M.N. Harun, Ardiyansyah Syahrom, M.R. Abdul Kadir</i>	50
028.	The influence of peg designs on glenoid component: A finite element study. <i>A.W.A. Hadi, M.R.A. Kadir, M.N. Harun, A. Syahrom</i>	52
029.	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. <i>E. Saputra, I.B. Anwar, R. Ismail, J. Jamari, E. van der Heide</i>	54
030.	Study on the biocompatibility and wear of stainless steel 316L and UHMWPE materials. <i>I.B. Anwar, E. Saputra, R. Ismail, J. Jamari, E. van der Heide</i>	56
031.	Characteristics of regenerated cartilage tissue cultured under traction loading. <i>K. Fukuda, S. Omata, T. Yamaguchi, Y. Sawae</i>	58
032.	Measuring human hair friction with a crossed fibres test setup. <i>V. Krasmik, J. Schlattmann</i>	60

Theme 3: Contact Mechanics

033.	Physical properties and energy absorption characteristic of open cell ENR/RR foam. <i>M.A. Mahamood, N. Mohamad, A.R. Jeefeeerie, A.H.M. Zain, M.I. Shueb, A.M. Hairul Effendy</i>	62
034.	Plastic deformation in running-in of rolling contact. <i>N.F. Mohd Yusof, Z.M. Ripin</i>	64
035.	Finite element modeling of the contact between an insole shoe and a ballnose cutter milling. <i>B. Bawono, P.W. Anggoro, J. Jamari, A.P. Bayuseno</i>	66
036.	A numerical investigation of mechanical behavior of unfilled styrene-butadiene rubber by static straight blade indentation. <i>B. Setiyana, R. Ismail, J. Jamari, D.J. Schipper</i>	68
037.	Finite element analysis of a two layer viscoelastic material in contact with a flat punch. <i>P.W. Anggoro, B. Bawono, J. Jamari, A.P. Bayuseno</i>	70

038.	Effects of drop height and damper thickness on shock output optimization for hard disk drive reliability. <i>C.K. Low, M. Jamil, M. Azrul, C.H. Tan, N. Kazuo, W.L. Ng, Watanabe Takeshi, M. Ridwan, M. Ridzwan</i>	72
039.	Running-in of an artificial rough rolling-sliding contact using finite element analysis. <i>R. Ismail, E. Saputra, J. Jamari, D.J. Schipper</i>	74
040.	Effect of geometry on the plastic contact between two hemispheres. <i>J. Jamari, E. Saputra, R. Ismail, M. Tauviqirrahman, D.J. Schipper</i>	76
041.	Stick-slip motions of polymer gels having multiple artificial asperities. <i>T. Yamaguchi, Y. Himeno, Y. Sawae</i>	78
042.	Novel design concept for Rayleigh step bearing with high robustness against step height change due to frictional wear. <i>Shunsuke Mori, Satoru Maegawa, Fumihiro Itoigawa, Takashi Nakamura</i>	80
043.	Measurements of surface displacement field for multi-contact interface of elastomers. <i>S. Maegawa, F. Itoigawa, T. Nakamura</i>	82
044.	Effects of dispersed sulfides in bronze under line contact conditions. <i>T. Sato, Y. Hirai, T. Fukui, K. Akiyama, H. Usami</i>	84
045.	Compressive properties and water contact behavior of opened-cell green rubber foam at different blowing agent concentration. <i>N. Mohamad, M. Mazliah, Z. Nur Sharafina, M.N. Amirul Asyraf, M.F.B. Abdollah, A.M. Hairul Effendy</i>	86
046.	Theoretical groundwork: An extension to the double Hertz model for adhesion between elastic cylinders. <i>N.H.M. Zini, M.B. de Rooij, N. Ismail, D.J. Schipper, A. Akchurin</i>	88
047.	The contact area of elastomers as a function of the sliding velocity. <i>N.V. Rodriguez, M. Khafidh, M.A. Masen, D.J. Schipper</i>	90

Theme 4: Friction and Wear

048.	An investigation of hard-on-soft contact: For reducing friction in hemispherical cup. <i>D.M. Razak, S. Syahrullail, M.A. Nurul, N. Nuraliza, Y. Azli</i>	92
049.	Wear characteristics of thixoforming hypoeutectic Al-Si-Cu alloy with Mg addition. <i>K.S. Alhawari, M.Z. Omar, M.J. Ghazali, M.S. Salleh, M.N. Mohammed</i>	94
050.	Effect of the particle angularity on friction coefficients and grit embedment of brake pad material. <i>M.K. Abdul Hamid, A.R. Abu Bakar</i>	96
051.	Influence of temperature on galling resistance of SS 416. <i>NA.P. Harsha, P.K. Limaye</i>	98

052.	Dry sliding wear of in-situ synthesized Al-TiC composites. <i>Abhishek Kumar, Rakesh K. Gautam, Rajnesh Tyagi</i>	100
053.	Sliding wear behavior of electro-carburized low carbon steel at high speed. <i>J.L.J. Ling, W.Y.H. Liew, N.J. Siambun</i>	102
054.	The characteristics of the fretting wear of Inconel738LC and CM247LC according to the roughness change. <i>Kyoung-Sup Kum, Young-Ze Lee</i>	104
055.	Reciprocating wear of mild steel carburized using Na ₂ CO ₃ -NaCl. <i>W.Y.H. Liew, Roonie Protasius, J.L.J. Ling, N.J. Siambun, Noor-Ajian Mohd-Lair</i>	106
056.	Tribological behavior of Al based self-lubricating composites. <i>Vineet Rajput, Rakesh K. Gautam, Rajnesh Tyagi</i>	108
057.	Effect of humidity on limiting friction: An experimental investigation. <i>K.S. Pondicherry, F. Wolf, G. Krenn</i>	111
058.	Detection of wear transition using change in frequency of AE signals. <i>Alan Hase, Yota Takemura, Hiroshi Mishina</i>	113
059.	Dry sliding wear behavior of Al-SiO ₂ composites. <i>S. Mohan, Gaurav Gautam, Narendra Kumar, R.K. Gautam, A. Mohan, Ashish. Kr. Jaiswal</i>	115
060.	Synthesis and tribological properties of AA5052 base <i>insitu</i> composites. <i>Gaurav Gautam, Narendra Kumar, Anita Mohan, Sunil Mohan, R.K. Gautam</i>	117
061.	The challenge of temperature measurement in tribology experiments. <i>T.C. Yap, K.O. Low, M.N. Ervina Efzan</i>	120
062.	Effects of oxidative degradation on the wear and wear particles of cross-linked UHMWPE. <i>L. Zhang, Y. Sawae, T. Murakami, T. Yamaguchi</i>	123
063.	Effect of trace moisture content on friction of carbon fiber filled PTFE in high purity gas. <i>H. Kojima, Y. Sawae, T. Morita, J. Sugimura</i>	125
064.	Severe-mild wear transition at different relative humidity rates. <i>K. Fukuda, T. Morita</i>	127
065.	Wear characteristics of a combustion liner for power generation gas turbine. <i>Ahmad Afiq Pauzi, Mariyam Jameelah Ghazali, Wan Fathul Hakim W. Zamri, Salmi Mohd Yunus, Shuib Husin</i>	129
066.	Kinetic and friction analyses of a preloaded double nut ball-screw. <i>Chin-Chung Wei, Dong-Hao Xu</i>	131
067.	Wear mechanism of carbide cutting tools in machining process. <i>Jaharah A. Ghani, Che Hassan Che Haron, Siti Haryani Tomadi, Mohd Shahir Kasim, Mohd Amri Sulaiman</i>	133

068.	Friction in fiber-fiber contact: An experimental setup. <i>N. Ismail, E.G. de Vries, M.B. de Rooij, N.H.M. Zini, D.J. Schipper</i>	135
069.	Effect of strain rate response and pin diameter on mechanically mixed layer formation and wear mechanisms in a Ti6Al4V – SS316L pair. <i>B Ashok Raj J., Satish V. Kailas</i>	137
070.	Influence of single and multiple particle size variation on mechanical and wear behaviour of aluminium silicon carbide composites. <i>A.A. Adebisi, M.A. Maleque, M.Y. Ali, K.A. Bello</i>	139
071.	The effect of oil treatment on wear property of medium carbon steel. <i>S. Kasolang, M.H.K. Anwar, M.H. Ismail, M.A.A. Bakar, N.R.N. Roselina, A. Jumahat</i>	142
072.	Significance of tool rotational speed and impact of tool pin profile on the tribological properties of friction stir welded AZ80A Mg alloy. <i>P. Sevvel, V. Jaiganesh</i>	144
073.	A comparative study for concrete strength prediction using Fuzzy modeling and Neuro-Fuzzy modeling techniques. <i>Q. Ahsan, M.L. Law, R. Farahiyan, N. Mohamad, H. Effendy, Sivarao</i>	146
074.	Abrasive wear rate on natural fibre composite. <i>M.A. Abu Bakar, M.A. Ahmad, S. Kasolang, N.R. Nik Roseley, N.R. Nik Mohd Masdek</i>	148

Theme 5: Fuels, Lubricants and Lubrication

075.	Experimental analysis of antiwear property of 460cSt industrial mineral gear oil with MWCNT and ZnO nanoparticles using pin-on-disc apparatus. <i>Shubrajit Bhaumik, S.D. Pathak</i>	150
076.	Investigation of Demnum-based PFPE lubricant thickness tendency with mixture of additive on magnetic hard disk head-disk interface (HDI) tribological performance. <i>Y.H. Ooi, Y. Y. Por, A. Khairul, S.P. Yeap, N. Kazuo, W.L. Ng</i>	153
077.	Study of graphene nanolubricant using thermogravimetric analysis. <i>A.K. Rasheed, M. Khalid, W. Rashmi, T.C.S.M. Gupta, A. Chan</i>	155
078.	Hydrodynamic lubrication of surface textured lubricated contacts with boundary slip using CFD. <i>M. Tauviqirrahman, Muchammad, A.W. Pratomo, J. Jamari, D.J. Schipper</i>	157
079.	Numerical investigation of pocketed slip slider bearing with non-Newtonian lubricant. <i>A.W. Pratomo, Muchammad, M. Tauviqirrahman, J. Jamari, A.P. Bayuseno</i>	159
080.	Effects of fuel additive to the fuel economy and emission in gasoline engine. <i>N.R. Abdullah, A.R. Asiah, A.J. Helmisyah, Z. Michael, M.A. Ahmad</i>	161
081.	Numerical investigation of the combined effects of slip and texture on tribological performance of bearing. <i>Susilowati, M. Tauviqirrahman, J. Jamari, A.P. Bayuseno</i>	163

082.	Effect of lubricants and thermal resistance filler on the pressure and speed sensitivity characteristics of non-asbestos low metallic disc brake pad formulation. <i>M. Rahul Ragh, R. Vijay, Arvind Venkatramani, D. Lenin Singaravelu</i>	165
083.	Development of Otto-ATR Raman spectroscopy for thin lubricant films. <i>S. Yada, S. Maegawa, F. Itoigawa, T. Nakamura</i>	167
084.	SPR microscopy with ATR Otto configuration for observing thin boundary lubrication films. <i>J. Yamaguchi, S. Maegawa, F. Itoigawa, T. Nakamura</i>	169
085.	Compensated hole-entry hybrid journal bearing by CFV restrictor under micropolar lubricants. <i>Nathi Ram, Satish C. Sharma, Arvind Rajput</i>	171
086.	Mechanism for increase in EHL oil film thickness by formation of sub-micrometer downsteps beside contact point. <i>H. Ishihara, T. Hirayama, T. Matsuoka</i>	173
087.	Rheological property of boundary layer formed by oiliness additive evaluated by a new rheometer with narrow clearance. <i>S. Shibata, Y. Hashimoto, T. Hirayama, T. Matsuoka</i>	175
088.	Effects of fuel additive quantity on fuel consumption and CO emissions of a 1.6L gasoline engine fueled with RON97. <i>N.R. Abdullah, Muhammad Hanif Mat, Aman Mohd Ihsan Mamat, Idris Saad, Muhammad Faiz Mat</i>	177
089.	New oil condition monitoring system, WearSens® enables continuous, online detection of critical operating conditions and wear damage. <i>Manfred Mauntz, Ullrich Kuipers, Jörn Peuser</i>	179
090.	Analyses of various viscosity effects to hydrodynamic lubrication in tube spinning process. <i>I. Nawi, B.A.M. Zain, W.A. Siswanto, N. Jaffery, H. Wahab</i>	181
091.	Dynamic behavior of diesel spray during end-of-injection influence by ambient density and pressure fuel injection. <i>Mohd Al-Hafiz Mohd Nawi, Naoya Uwa, Yuki Ueda, Yuzuru Nada, Yoshiyuki Kidoguchi</i>	183
092.	Lubricating oil deterioration on a four-ball test rig via on-line monitoring. <i>Y. Du, T.H. Wu, J. Cheng, R.J. Gong</i>	185
093.	Review of biodiesel standard development in Malaysia. <i>N. Tamaldin, M.F.B. Abdollah, H. Amiruddin, A.K. Mat Yamin, H.H. Masjuki, Z.M. Zulfattah</i>	187
094.	Comparison of the frictional properties of nano-oil and SAE 15W40 oil diluted with biodiesel fuel. <i>M.I.H.C. Abdullah, M.F.B. Abdollah, N.R. Mat Nuri, H. Amiruddin, N. Tamaldin</i>	190
095.	Evaluations of piston ring wear using nano hexagonal boron nitride lubricant additives in small diesel engine. <i>M.I.H.C. Abdullah, M.F.B. Abdollah, H. Amiruddin, N. Tamaldin, N.R. Mat Nuri</i>	192

Theme 6: Green Tribology

096. AW/EP behavior of WS₂ nanoparticles added to vegetable oil-based lubricant.
M. Gulzar, H.H. Masjuki, M. Varman, M.A. Kalam, R.A. Mufti, Rehan Zahid, R. Yunus 194
097. Non-edible palm oil: Alternative to mineral based lubricant in metal forming process.
M.A. Nurul, S. Syahrullail, D.M. Razak 196
098. 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 199
099. 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 201
100. 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 203
101. Graphene nanoplatelets in bio-based lubricant.
S.S.N. Azman, N.W.M. Zulkifli, H.H. Masjuki 205
102. Tribological performance of raw and chemically modified RBD palm kernel.
A.N. Farhanah, S. Syahrullail, N. Sapawe 207
103. The feasibility study of CaCO₃ derived from cockleshell as nanoparticle in chemically modified lubricant.
N.A. Zainal, N.W.M. Zulkifli, M. Yusoff, H.H. Masjuki, R. Yunus 209
104. 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 211
105. 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 213
106. 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 215
107. Comparison of physical and tribological properties of coconut oils extracted from dry and wet processing.
D. Gasni, I. H. Mulyadi, Jon Affi 217
108. Preliminary study of friction and wear on natural oil-based lubricants.
M.I.R. Azmi, B.T. Tee, N.A.B. Masripan, C.T. Chong 220
109. EDS analysis of tribofilm formed on self-mated stainless steel lubricated by palm biodiesel.
Z. Fuadi, T. Takeno, K. Adachi, M. Tadjududdin 222

110.	Innovision in ecotribology: Biomimetic approaches. <i>I.C. Gebeshuber</i>	224
111.	Characterized and toxicity study of carbon nanotubes synthesis from fermented tapioca for tribological applications. <i>I. Nurulhuda, R. Poh, M.Z. Mazatulikhma, M. Rusop</i>	226
112.	Structural properties of graphene from green carbon source via Thermal Chemical Vapour Deposition (CVD). <i>M.J. Salifairus, S.B. Abd Hamid, T. Soga, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop</i>	228
113.	Development of a versatile mechanical property testing platform. <i>Wanxin Sun</i>	230

Theme 7: Surface, Coatings and Interface

114.	FEM analysis in identifying the turning parameters for dimple structure fabrication. <i>Mohd Nor Azam Mohd Dali, Jaharah A. Ghani, Che Hassan Che Haron</i>	232
115.	Characteristics of PVD CrAlN thin film on Al-Si piston alloy. <i>Q.M. Mehran, A.R. Bushroa, M.A. Fazal</i>	234
116.	Comparative study of conventional blasting in Labuan Shipyard and Engineering (LSE): Reliability of recycled garnet. <i>Nur Hidayatul Nadhirah Elmi Azham Shah, Ali Saman, Muhammad Hussain Ismail</i>	236
117.	Investigation into effect of silicon morphology on surface roughness while machining Al-Si-Cu-Mg alloy. <i>M. Marani Barzani, A.A.D. Sarhan, S. Ramesh, I. Maher, S. Farahany</i>	238
118.	White layer thickness prediction in WEDM-ANFIS modelling. <i>Ibrahem Maher, Ahmed A.D. Sarhan, Houriyeh Marashi, Mohsen Marani Barzani, M. Hamdi</i>	240
119.	Enhanced surface roughness of AISI D2 steel machined using nano-powder mixed electrical discharge machining. <i>Houriyeh Marashi, Ahmed A.D. Sarhan, Ibrahem Maher, M. Sayuti, M. Hamdi</i>	242
120.	Laser surface texturing on ceramic coating. <i>Juyana A Wahab, M.J. Ghazali, W.M.W. Yusoff, Z. Sajuri</i>	244
121.	Effect of surface texture on the tribological performance of DLC coating. <i>A. Arslan, H.H. Masjuki, M. Varman, A. Kalam, R.A. Mufti, M. Gulzar, M.M. Quazi</i>	246
122.	Substrate temperature impact towards carbon overcoat properties and corrosion performance in magnetic recording media. <i>Amalina Balqis, Mun-Sing Fan, M. Shapuan M. Yusop, W.S. Khoo, Lawrence Ng Wah, Kazuo Nimura</i>	248

123.	Theoretical investigation of texture depth effect on the lubrication performance in slip pocketed bearing including cavitation. <i>Muchammad, M. Tauviqirrahman, A.W. Pratomo, J. Jamari, D.J. Schipper</i>	251
124.	Clarification the effects of oxygen to carbon ratio on wear mechanism of diamond-like carbon under pressurized hot water. <i>M.Z.M. Rody, K. Okuno, N. Umehara, N. Inayoshi, K. Sasaki, S. Kawara, H. Kousaka, X. Deng</i>	253
125.	Diamond like carbon deposition process optimization for media disk corrosion performance. <i>W.S. Khoo, R. Md. Nasir, M.R. Zaidi, W.L. Ng</i>	255
126.	Influences of carbon content within TiCxN1-x coating to adhesivity onto tungsten carbide substrate. <i>P.C. Siew, J.A. Ghani, C.H. Che Haron, M.J. Ghazali, T.R. Jaafar</i>	257
127.	Surface roughness of AlSi/AlN metal matrix composite material using the Taguchi method. <i>M.S. Said, J.A. Ghani, N.N Wan, C.H. Che Haron</i>	259
128.	A study on powder-pack boronizing of 316 stainless-steel ball bearing. <i>N.H. Omar, R. Hasan, N.A.B. Masripan</i>	261
129.	Interconnect material preparation via milled and ultrasonically Fe ₈₀ Cr ₂₀ alloy powder. <i>A.M. Leman, I. Baba, B. Abu Bakar, R. Rahmad, D. Feriyanto, D. Sebayang</i>	263
130.	Preparation and characterization of TIG-alloyed hybrid composite coatings for high temperature solid lubrication. <i>K.A. Bello, M.A. Maleque, Z. Ahmad, A.A. Adebisi, S. Mirdha</i>	265
131.	Characterisation of surface modification on titanium alloys for dental implant application. <i>A. Jemat, M.J. Ghazali, M. Razali, Y. Otsuka</i>	268
132.	Corrosion behavior and mechanical properties of duplex coating Ti6Al4V/TiAlBN. <i>Yusliza Yusuf, Zulkifli Mohd. Rosli, Jariah Mohamad Juoi, Nooririnah Omar</i>	271
133.	A study on effect of laser textured cast iron surfaces on reducing friction and wear. <i>N.A.M. Lazim, S.E.M. Kamal, R. Hasan</i>	273
134.	Analysis of sliding contact temperature for roughness surface. <i>S.Y. Chern, J.H. Horng, H.J. Tsai, C.H. Tsai</i>	275
135.	Characterization of thermal barrier coating on piston crown for high temperature internal combustion engine. <i>Helmisyah Ahmad Jalaludin, Muhammad Akmal Fahmi Mohammad, Salmiah Kasolang, Shahrir Abdullah</i>	278
136.	The effect of macro-rivet textures on tribological performances. <i>M.N.A.M. Yusoff, H.H. Masjuki, N.W.M. Zulkifli</i>	280

137.	3D modeling of rough surface from the measurement data. <i>Kartini, E. Saputra, R. Ismail, J. Jamari, A.P. Bayuseno</i>	282
138.	Hydrogen permeation into bearing steels under sliding. <i>H. Tanaka, T. Komatsu, J. Sugimura</i>	284
139.	Improved cold sprayed CoNiCrAlY bond coat in thermal barrier coating. <i>A. Manap, N.F. Afandi, S.N.A. Yusof</i>	286
140.	Tribological analysis of touch experience about various fabrics. <i>M.S. Kim, Y.Z. Lee</i>	288
141.	Tribological study of nanoporous amorphous boron carbide film prepared by pulsed plasma CVD. <i>S. Liza, N. Ohtake, H. Akasaka, J.M. Munoz-Guijosa, H.H. Masjuki</i>	290
142.	Direct observation of adsorbed additive layer at solid-liquid interface by frequency-modulation atomic force microscopy. <i>K. Fujino, R. Kawamura, T. Matsuoka, T. Hirayama, H. Onishi</i>	292
143.	Tribological properties of polymer overlay coated on the micro-textured metal substrate. <i>J. Ishihara, Y. Horiba, K. Enomoto, H. Usami</i>	294
144.	Research on thermal stability of DLC by using in-situ Environmental Scanning Electron. <i>X. Deng, H. Izuoka, H. Kousaka, N. Umehara</i>	296
145.	DLC coatings for cam follower applications: The role of the surface on tribochemical reactions, friction and wear. <i>MacDonald Ofune, Liuquan Yang, Ardian Morina, Anne Neville</i>	298
146.	Hybrid bilayer structure PbTiO ₃ /PVDF-TrFE prepared by spin coating method for capacitor applications. <i>Nurbaya Zainal, M.H. Wahid, Rozana Dahan, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop</i>	300
147.	Investigation of ZnO nanotrapods at different evaporation temperature prepared by thermal-CVD method for OLED applications. <i>N.E.A. Azhar, S.S. Shariffudin, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop</i>	302
148.	Artificial intelligence technique in solving nano-process parameter optimization problem. <i>M.S. Norlina, M.S. Nor Diyana, P. Mazidah, M. Rusop</i>	304
149.	Sensing properties of nanostructured zinc oxide-based gas sensor fabricated using immersion method. <i>A.K. Shafura, M.H. Mamat, M. Uzer, A. Shuhaimi, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop</i>	306
150.	The effect of different molarity on TiO ₂ solution prepared by sol-gel method. <i>I.H.H. Affendi, M.S.P. Sarah, Salman A.H. Alrokayan, Haseeb A. Khan, M. Rusop</i>	308

151.	Performance of TiCN and TiAlN coated twist drills. <i>R.J. Talib, S.M. Firdaus, H.M. Ariff</i>	310
152.	Correlations for roughness, slope and peak height for bead blasted surfaces. <i>S.M.S. Wahid, C.V. Madhusudana</i>	312
153.	Recent advances in non-contact metrology, high speed measurement, steep slope measurement and correlation with stylus data. <i>M. Conroy, R. Burton, Y. Yu, T. Kumagi</i>	314
154.	Electroless Ni-P-Cu-CuO composite coatings on mildsteel with zwitterionic surfactant. <i>R. Muraliraja, R. Elansezhan</i>	316
155.	Effects of oil groove location on viscosity profile in hydrodynamic lubrication journal bearing. <i>Mohamad Ali Ahmad, Salmiah Kasolang, Jaharah A. Ghani</i>	317
156.	Wear properties of nanoclay filled epoxy polymer. <i>A. Jumahat, A.A.A. Talib, A. Abdullah</i>	320
157.	Tool condition monitoring in milling using sensor fusion technique. <i>S. Shankar, T. Mohanraj</i>	322
158.	The effect of titanium dioxide nanoparticles on bio-lubricant film thickness using ultrasonic reflection. <i>S. Kasolang, N.S. Mohamad, M.A.A. Bakar, A. Jumahat, N.R. Nik Roselina</i>	324
159.	The development of ceramic fiber via sacrificial method. <i>M.S. Sharmiwati, Z. Azmiza, S. Fazidah, M.H. Nuraida, H. Roshanizah</i>	327