



# ICOME 2021

## SCHEDULE

### 5<sup>th</sup> INTERNATIONAL CONFERENCE ON MECHANICAL ENGINEERING 2021 (ICOME)

25-26 Agustus 2021

Wednesday, August 25, 2021	
Time	Description
07.30 - 08.00	Participant registration
08.00 – 08.40	Opening Ceremony
08.40 – 09.20	Keynote Speech I Assoc. Prof. Aziz Muhammad Moderator: Dr. Alief Wikarta
09.20 – 09.25	Break
09.25 – 10.05	Keynote Speech II Asst. Prof. Muhammad Nur Yuniarto Moderator: Dr. Yohanes
10.05 – 10.15	Break
10.15 – 12.15	Parallel Session I
12.15 – 13.00	Breaks
13.00 – 13.40	Keynote Speech III Prof. Michael R Wisnom Moderator: Dr. Putu Suwarta
13.40 – 13.55	Breaks
13.55 – 15.55	Parallel Session II
15.55 – 16.10	Closing
Thursday, August 26, 2021	
Time	Description
07.00 - 07.50	Participant registration
07.50 – 08.00	Conference Opening
08.00 – 08.40	Keynote Speech IV Prof. Anastasia Muliana Moderator: Dr. Latifah Nurahmi
08.40 – 08.45	Break
08.45 – 09.25	Keynote Speech V Assoc. Prof. Yoojeong Noh Moderator: Moch Solichin, M.T.
09.25 – 09.30	Break
09.30 – 10.10	Keynote Speech VI Ir. Wiluyo Kusdiharto, S.T., IPU, MBA Moderator: Dr. Ary Bachtiar
10.10 – 10.30	Breaks



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Thursday, August 26, 2021

Time	Description
10.30 – 12.15	Parallel Session III
12.15 – 12.45	Breaks
12.45 – 15.00	Parallel Session IV
15.00 – 15.15	Breaks
15.15 – 17.00	Parallel Session V
17.00 – 17.15	Closing Ceremony

ONLINE CERTIFICATE WILL BE GIVEN TO ALL PARTICIPANTS



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5<sup>th</sup> International Conference on Mechanical Engineering 2021 (ICOME)

## Parallel Session Mapping

Date & Time	Parallel Session	Breakout room Name and Paper Number				
		Alpha (Fluid Mechanics)	Beta (Energy Conversion)	Delta (Material)	Gamma (Design)	Kappa (Manufacture)
August, 25 <sup>th</sup> 10. <sup>15</sup> – 12. <sup>15</sup>	1	043, 016, 076, 085, 100, 157, 158, 142	116, 011, 052, 053, 054, 063, 117, 188	024, 060, 069, 149, 179, 181, 172, 096	133, 026, 027, 035, 107, 109, 161, 170	169, 034, 037, 146, 104, 155, 176, 191
August, 25 <sup>th</sup> 13. <sup>55</sup> – 15. <sup>55</sup>	2	186, 001, 008, 073, 079, 119, 132, 185	078, 093, 122, 125, 129, 135, 159, 171, 196*	013, 038, 064, 067, 068, 103, 139, 178	115, 077, 095, 111, 123, 145, 151, 189	195, 025, 044, 120, 147, 152, 162, 168
August, 26 <sup>th</sup> 10. <sup>30</sup> – 12. <sup>15</sup>	3	193, 032, 065, 072, 074, 098, 128	022, 045, 084, 108, 124, 164, 136	014, 017, 087, 088, 101, 154, 165	005, 066, 094, 071, 112, 144, 153	102, 113, 137
August, 26 <sup>th</sup> 12. <sup>45</sup> – 15. <sup>00</sup>	4	114, 002, 046, 047, 056, 057, 106, 192, 175	194, 021, 029, 041, 110, 127, 138, 143, 134	187, 020, 023, 031, 036, 049, 131, 163, 183	173, 003, 004, 007, 039, 075, 080, 083, 190	-
August, 26 <sup>th</sup> 15. <sup>15</sup> – 17. <sup>00</sup>	5	184, 010, 028, 040, 130, 148, 160	062, 015, 019, 055, 058, 059, 092	018, 061, 086, 141, 166, 180, 182	070, 099, 126, 150, 174, 177, 156	-

Note:

\*for parallel session 2 in the Beta breakout room will be end late 15 minutes due to 9 presentations in this room



# ICOME 2021

Wednesday, August 25<sup>th</sup>, 2021 – Parallel Session 1

Breakout room: Alpha (Fluid Mechanics)

Time	Alpha (Fluid Mechanics)
10.15 – 10.30	043. Testing an In-House CFD Code for Solving Gas-Solid Flow with Different Simulation Parameters <i>Is Bunyamin Suryo, Tri Yogi Yuwono and Uwe Schnell</i>
10.30 – 10.45	016. Determination of Horizontal Turbine Airfoil Type for Power Plant in Tulungagung – East Java <i>Akhmad Safi'l, Tri Yogi Yuwono and Bambang Arip D</i>
10.45 – 11.00	076. Numerical Study of the Effects of Burner Tilt and Coal Optimization on Combustion Characteristics of 350 MWe Tangentially Fired Pulverized-Coal Boiler <i>Halim Halim, Atok Setiyawan and Ary Bachtiar</i>
11.00 – 11.15	085. Numerical Study of Flow Characteristics and Combustion of Boiler PLTU 4-5 Muara Karang with Variations of O <sub>2</sub> Levels in Combustion Air <i>Muhammad Deni, Bambang Sudarmanta and Atok S</i>
11.15 – 11.30	100. The Performance of Magnetostrictive Material for Wind-Induced Vibration Power Generator <i>La Ode Ahmad Barata, Edward Ngij, Takahiro Kiwata and Toshiyuki Ueno</i>
11.30 – 11.45	157. Investigation of The Four Runner Blades Arrangement Against the Power of Kaplan Turbine <i>Sirojuddin, Nadia Sari Dewi and Ragil Sukarno</i>
11.45 – 12.00	158. Investigation of The Runner Blade Arrangements on a 3-Blade Kaplan Turbine against Turbine Power <i>Sirojuddin, Alya Awanis Zahara and Ragil Sukarno</i>
12.00 – 12.15	142. Numerical Study of the Medium-Speed Train Design with Wall on One Side <i>Vivien S. Djanali, Quraisy Amri and Agus Windharto</i>

Breakout room: Beta (Energy Conversion)

Time	Beta (Energy Conversion)
10.15 – 10.30	116. Numerical Study of the Effect of Ducting Shape on the Heat Transfer Radiator Electric Formula Car <i>Bambang Arip Dwiyanoro and Fahri Humaidi</i>
10.30 – 10.45	011. Numerical Study for The Modified Cooler of SAF Motor at a Power Plant <i>Khoirul Huda, Prabowo and Bambang Arip D</i>
10.45 – 11.00	052. Analysis of Preheater Circulating Control Valve Opening Effect to Steam Turbine Efficiency at Gresik Combined Cycle Power Plant Using Cycle-Tempo Software <i>Agus Priyono, Djatmiko Ichsani and Ary Bachtiar</i>
11.00 – 11.15	053. Optimization of Coal Blending with Genetic Algorithm in Furnace Blending Boiler Tangential <i>Mohamad Kurnadi, Sutikno Sutikno and Mohammad Khoirul Effendi</i>
11.15 – 11.30	054. Numerical Study of Fin Height Effects with Staggered Arrangement in Annular-Finned Tube Heat Exchangers <i>Deluxe La and Prabowo</i>



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Time	Beta (Energy Conversion)
11.30 – 11.45	063. Numerical Study Impact of Coal Optimization on the Erosion Rate of the Low Temperature Superheater(LTSH) Pipeline PLTU West Java 2 Palabuhan Ratu 3x350 MW <i>Agam Sastrowibowo, Wawan Aries Widodo, Fahmi Mubarak and Heru Hermawan</i>
11.45 – 12.00	117. Experimental of The Influence of Blade Pitch Angle Cooler Fan on The Performance of Closed Cooling Water System Gas Turbine <i>Setya Budi and Bambang Arip Dwiyantoro</i>
12.00 – 12.15	188. The Effect of Corncob Active Carbon Adsorbent Mass on Methane and Carbon Dioxide Content on Biogas Purification <i>Slamet Wahyudi</i>

## Breakout room: Delta (Material)

Time	Delta (Material)
10.15 – 10.30	024. Experimental Study of Sound Absorption Coefficient Characteristics of Oil Palm Frond Reinforced Composite <i>Samrith Khem, Sutikno, Putu Suwarta and Budi Istana</i>
10.30 – 10.45	060. Durability Study of Glass/Carbon Hybrid Composites Immersed in Seawater for Marine Application <i>Kosim Abdurrohman, Afid Nugroho and Mohammad Adhitya</i>
10.45 – 11.00	069. Experimental and Numerical Investigations on The Tensile Behaviour of Bamboo-Glass Fibres Hybrid Reinforced Polymer Composites <i>Sugiman Sugiman, Paryanto Dwi Setyawan, Agus Dwi Catur and Ahmad Hilton</i>
11.00 – 11.15	149. Preparation and Characterization of Hydroxyapatite/Zinc Composites with Variation of Alginate Concentrations for Bone Scaffold Application <i>Jane Varingga Ramadhani, Gusti Umindya Nur Tajalla and Ade Wahyu Yusariarta Putra Parmita</i>
11.15 – 11.30	179. Effect of Porous Agent on Morphology, Mechanical Properties, and Biodegradation Rate of PLLA/Nano-Hydroxyapatite 3D Scaffolds Composite <i>Agung Purniawan, Hafidz Hizbillah and Amaliya Rasyida</i>
11.30 – 11.45	181. Investigation of The Effect of Dwelling Time and Compaction Pressure on Mechanical Properties and Microstructure of CuSn Composite <i>Widyastuti, Rindang Fajarin and Faizah Ali</i>
11.45 – 12.00	172. The Coats-Redfern Models Kinetics Analysis of Tetraselmis chunii - Titanium Dioxide Nanoparticle Blend During Combustion Process <i>Ardianto Prasetyo, Sukarni Sukarni and Poppy Puspitasari</i>
12.00 -12.15	096. Study of the microwave heating energy on the electrochemical performance of GDCSr electrospun nanofiber composite cathode for intermediate SOFC <i>Ika Dewi Wijayanti and Chou Chen Chia</i>

## Breakout room: Gamma (Design)

Time	Gamma (Design)
10.15 – 10.30	133. Ball Screw Regenerative Shock Absorber Design and Road Test for Small Class Multi-Purpose Vehicle Suspension <i>Harus Laksana Guntur, Wiwiek Hendrowati and Dion Khairul Nugraha</i>



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Time	Gamma (Design)
10.30 – 10.45	026. Design and Analysis Bicycle static as Physical Therapy Upper and Lower Body Exercise for Pasca-Stroke Patient <i>Luthfi Hakim, Mohammad Muslimin and Alfi Tranggono Agus Salim</i>
10.45 – 11.00	027. ANN Based Model Design Optimisation of Direct-Drive Wheel Hub Motor for an Electric Scooter <i>Ida Bagus Putu Putra Mahartana and Harus Laksana Guntur</i>
11.00 – 11.15	035. Design Optimization of Coupling Link and Hooked Plate on the Automatic Coupler for High Speed Train <i>Jean Mario, Agus Sigit Pramono and Achmad Syaifudin</i>
11.15 – 11.30	107. Crashworthiness Optimisation of FSAE Vehicle Chassis through Biomimetic Approach <i>Chan En Lim, Kok Hing Chong, Muhammad Rafiq Mirza Bin Julaihi and Chin Voon Charlie Sia</i>
11.30 – 11.45	109. The Design of an Aerodynamic Shell Eco- Marathon (SEM) Urban Concept Vehicle <i>Lin Hui Wong, Muhammad Rafiq Mirza Julaihi and Kok Hing Chong</i>
11.45 – 12.00	161. Topology Optimization and Prototyping of a Suspension Bell crank for a Formula SAE Car <i>Alief Wikarta, Tito Apriliansa and Imang Eko Saputro</i>
12.00 – 12.15	170. Design and Dynamic Model of Coaxial Magnetic Gear for Multi-Purpose Vehicle E-Drivetrain <i>Harus Guntur and Bambang Sudarmanta</i>

## Breakout room: Kappa (Manufacture)

Time	Kappa (Manufacture)
10.15 – 10.30	169. Trajectory Planning of Cable Driven Parallel Robot with Mobile Crane <i>Made Bhaswara Wiranugeraha, Hor Tan and Latifah Nurahmi</i>
10.30 – 10.45	034. Design and Construction of a 2 DOF Manipulator Robot Gripper with a Capacity of 1.25 kgf <i>Siti Solikhah</i>
10.45 – 11.00	037. Design and Construction of a Manipulator Robotic Arm Structure Capacity of 1,25 kgf with Counterweight <i>Adam Naufal Setiawan</i>
11.00 – 11.15	146. Facial Recognition Based Automatic Door Security System Integrated with Internet of Things for Smart Home Actualization <i>Billy Indrawan, Deanova Ghivari Alzamora and Muhammad Shiddiq Rahmatullah</i>
11.15 – 11.30	104. Parameter Design of Plasma Cutting to Optimize Kerf Width and Material Removal Rate Stainless Steel 316 <i>Wima Azis Khanafi, Suprayitno Suprayitno and Yanuar Rohmat Aji Pradana</i>
11.30 – 11.45	155. Data Driven LoRa Precision Agriculture as a Farm Monitoring Solution and Increasing Efficiency of Water Use and Consumption of NPK Fertilizer <i>Hafiz Gunawan, Wafiq Rizaldi, Nur Putri and Danial Maulana</i>
11.45 – 12.00	176. Robust $H_{\infty}$ Controller with Parametric Uncertainties for Anti-Rolling Gyro System <i>Unggul Wasiwitono, Latifah Nurahmi, Ari Kurniawan Saputra and Bambang Pramujati</i>



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Time	Kappa (Manufacture)
12.00 – 12.15	191. Cooling Temperature simulation and Injection Time in Injection Molding Machine against Head toothbrush Product Quality <i>Akhmad Wildan Alfikrul Haqqi, Andoko Andoko and Yanuar Rohmat Aji Pradana</i>



# ICOME 2021

Wednesday, August 25<sup>th</sup>, 2021 – Parallel Session 2

Breakout room: Alpha (Fluid Mechanics)

Time	Alpha (Fluid Mechanics)
13.55 – 14.10	186. Computational Fluid Dynamics Study of a Steam Reformer Unit Performance to Produce Hydrogen Fuel for PEM Fuel Cell Applications <i>Hussein A.Z. Al-Bonsrulah, Dhinakaran Veeman and M. V. Reddy</i>
14.10 – 14.25	001. Turbulent Boundary Layer over 3D Sinusoidal Roughness <i>Misarah Abdelaziz, Lyazid Djenidi, Mergen H. Ghayesh and Rey Chin</i>
14.25 – 14.40	008. Numerical Study Air Preheat Coil Modelling as Porous Medium to Analyze Flow Characteristic and Improves Productivity in Muara Karang Unit 4 Steam Power Plant <i>Rizal Mahendra Pratama, Tri Yogi Yuwono and Wawan Aries Widodo</i>
14.40 – 14.55	073. Performance Assessment of Drying Machine Using CFD <i>Mokhammad Fahmi Izdiharrudin, Ridho Hantoro and Erna Septyaningrum</i>
14.55 – 15.10	079. Cold Isostatic Pressure Treatment in the preparation of Al and Y doped LLZO (Li <sub>6.15</sub> La <sub>3</sub> Zr <sub>1.75</sub> Al <sub>0.2</sub> Y <sub>0.25</sub> O <sub>12-8</sub> ) Solid Electrolyte <i>Septia Kurniawati Arifah, Fitriah Rahmawati and Yuniawan Hidayat</i>
15.10 – 15.25	119. Study of Modified Absorber Plate with Aluminium Foam of Solar Water Heating System <i>Haddada, Rustan Tarakka, Muhammad Syahid and M. Anis Ilahi Ramadhani</i>
15.25 – 15.40	132. Effect of Propylene Glycol on Supercooling NaCl-H <sub>2</sub> O So-lution as PCM to Reduce Energy Consumption in Hybrid Reefer Container <i>Imam Nur Rokhim and Sutopo Purwono Fitri</i>
15.40 – 15.55	185. Numerical Simulation of the Effect of SA/PA on Combustion and Flow Characteristics in a Front-Rear Burner 400 MWe Boiler <i>Dimitra Meidina Kusnadi and Wawan Aries Widodo</i>

Breakout room: Beta (Energy Conversion)

Time	Beta (Energy Conversion)
13.55 – 14.10	122. Design Optimization of High-Pressure Heater using Stochastic Algorithm Method <i>Totok Ruki Biyanto and Fatma Ayu Nadyanya</i>
14.10 – 14.25	078. The Challenge of Converting Low Wind Mechanical Energy and The Need for Electrical Energy in Indonesia with A Triboelectric Nanogenerator <i>Aris Ansori, Sudjito Soeparman, Denny Widhiyanuriawan and Teguh Dwi Widodo</i>
14.25 – 14.40	093. Potential of A Grid-Tied PV System: A Field Study in Hot and Sunny Climate Regions <i>I Nyoman Suamir, I Wayan Temaja and I Nengah Ardita</i>
14.40 – 14.55	125. Swappable Battery Innovation as a Drone Frame Structure with Purpose to Increasing the Flight Time Duration <i>Puguh Pambudi, Muhammad Haekal Shafi, Valiant Tirta Amarta, Ferdina Ramadhansyah and Alief Wikarta</i>
14.55 – 15.10	129. Analysis of Parameters Affecting Vortex Formation on Gravitational Water Vortex Power Plant (GWVPP) <i>Erna Septyaningrum, Ridho Hantoro and Ester Carolina</i>





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Time	Beta (Energy Conversion)
15.10 – 15.25	135. Case Study : The Effect of Inlet Air Cooling to Power Output Enhancement of Gas Turbine <i>Iman Firmansyah and Prabowo</i>
15.25 – 15.40	159. Air Flow Around Traditional Buildings <i>I Gusti Bagus Wijaya Kusuma</i>
15.40 – 15.55	171. Co-combustion of Water Hyacinth ( <i>Eichhornia crassipes</i> ) and Coal: Thermal Behavior and Kinetics Analysis under the Coats-Redfern Method <i>Sukarni Sukarni, Nandang Mufti, Avita Ayu Permanasari, Ardianto Prasetyo, Poppy Puspitasari and Anwar Johari</i>
15.55 – 16.10	196. Integrated Renewable Energy System based on Energy Storage in Electrolytic Hydrogen Mohan Kolhe

## Breakout room: Delta (Material)

Time	Delta (Material)
13.55 – 14.10	013. Behavior of Concrete Containing High Density Polyethylene Waste, of granular Morphology <i>Taibi Houria, Nasser Bachir, Aattache Amel and Draoua Zohra</i>
14.10 – 14.25	038. Application of Psidium guajava Leaf Extract as an Organic Inhibitor in Acid Solution and Temperature Variation <i>Atria Pradityana, Eddy Widiyono, Hari Subiyanto, Nur Husodo and Muhammad Saiful Rizal</i>
14.25 – 14.40	064. Effect of Post Curing Heat Treatment on Tensile Properties of Carbon UD/Vinyl Ester Composite with VARI Manufacturing Method <i>Lathifa Rusita Isna, Kosim Abdurrohman, Awang Rahmadi, M Aris Pratama and Wahyuni Fajar Arum</i>
14.40 – 14.55	067. Effect of Surface Treatment of Tire Rubber on The Tensile Properties of Tire Rubber/Epoxy Composites <i>Sugiman Sugiman, Didin Rizaldi, Salman Salman and Buan Anshari</i>
14.55 – 15.10	068. Buttering layer and heat treatment influence on Dissimilar Welding of T91 Steel and 347 Austenitic Stainless Steel <i>Andik Santoso, Suwarno Suwarno, Teguh Widjajanto and Fahmi Mubarak</i>
15.10 – 15.25	103. Microstructural Characterization of Polylactide/Polycaprolactone Biodegradable Blends for Plate Fixation Internal Application <i>Solechan, Agus Suprihanto, Susilo Adi Widyanto and Joko Triyono</i>
15.25 – 15.40	139 Numerical Study on The Effects of Coefficient of Friction to The Dynamic Sliding Contact Between Bearing and Talar Components of Metal on Polymer Total Ankle Replacement Implants <i>Handoko Handoko, Budi Basuki and Rini Dharmastiti</i>
15.40 – 15.55	178. Optimization of Mixing Speed Parameter for Homogeneous of CuSn Composites <i>Widyastuti, Budi Agung Kurniawan, Raihan Sa'Di, Ninik Safrida and Adhy Prihatmiko Wibowo</i>



# ICOME 2021

## Breakout room: Gamma (Design)

Time	Gamma (Design)
13.55 – 14.10	115. Combining Correlation Technique with Exhaustive Search Feature Selection Method for Rotating Machinery Fault Diagnosis <i>Mochammad Solichin, Yoojeong Noh and Young-Jin Kang</i>
14.10 – 14.25	077. Analysis of Linkage Length Effect on The Dynamics of Series Active Variable Geometry Suspension <i>Rizal Bagus Prayogo and Unggul Wasiwitono</i>
14.25 – 14.40	095. Analysis of The Reduction of Vibration and Chatter Effect in Boring Process due to The Addition of Spring Radial Vibration Damper (SRVD) on The Workpiece <i>Wiwiek Hendrowati and Mumtaza Rizky Iswanda</i>
14.40 – 14.55	111. Analysis of vibration characteristics due to the effect of adding Rubber Radial Vibration Damper (RRVD) to the boring process <i>Wiwiek Hendrowati, Aida Annisa Amin Daman, Harus Laksana Guntur and Fuad Adi</i>
14.55 – 15.10	123. Simulation and Dynamic System Modeling in an Elastically Supported Rigid Cylinder for vibration energy harvesting <i>Subekti Subekti, Harus Laksana Guntur, Vivien Suphandani and Achmad Syaifudin</i>
15.10 – 15.25	145. Performance of Tri-Adhesive Joints to Improve the Shear Stress Distribution of Lap Joints <i>Witono Hardi, Agus Sigit Pramono and Yohanes Yohanes</i>
15.25 – 15.40	151. The Orientation and High-Quality Effect of Deposit Layer to Surface Roughness on FDM 3D Printed Part <i>Redyarsa Dharma Bintara, Yanuar Rohmat Aji Pradana, Aminnudin Aminnudin and Heru Suryanto</i>
15.40 – 15.55	189. Stress and Fatigue Life Simulation of Camshaft with Structural Static ANSYS Approach <i>Andoko Andoko, Riduwan Prasetya and Femiana Gapsari</i>

## Breakout room: Kappa (Manufacture)

Time	Kappa (Manufacture)
13.55 – 14.10	195. Work Exchange Networks Synthesis Based on Superstructure Approach <i>Yu Ming Zhang, Vincentius Surya Kurnia Adi</i>
14.10 – 14.25	025. Tricycle with an Electric Drive Mechanism for Post-Stroke Rehabilitation <i>Rosadila Febritasari and I Made Londen Batan</i>
14.25 – 14.40	044. Product Design Evaluation of E-Waste Washing Machine to Facilitate the Remanufacturing Process <i>Ronald Okky Kurnianto and Yopi Yusuf Tanoto</i>
14.40 – 14.55	120. The Strength Analysis of Dovetail Joint on 3D Printed Part Polylactic Acid Using Computer Simulation <i>Arya Mulyana Kusumah, Redyarsa Dharma Bintara and Suprayitno Suprayitno</i>
14.55 – 15.10	147. On-Line Quality Control in The Injection Machine for the Process Statistic of Thermoplastics Material



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Time	Kappa (Manufacture)
	<i>Riona Ihsan Media</i>
15.10 – 15.25	152. Energy Absorption analysis on the crash-module shape of medium speed train <i>Achmad Syaifudin, Made A.Y. Pustaka, Abdul Rohman Farid and Agus Windarto</i>
15.25 – 15.40	162. Development of 3D Gait Analysis System Based on Partial Motion Data <i>Sandro Mihradi, Ferryanto Ferryanto, Tatacipta Dirgantara and Andi Mahyuddin</i>
15.40 – 15.55	168. Synthesis Analysis to Improve Coupling Strength of Automatic Coupler <i>Jean Mario, Achmad Syaifudin and Agus Sigit Pramono</i>



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Thursday, August 26<sup>th</sup>, 2021 – Parallel Session 3

Breakout room: Alpha (Fluid Mechanics)

Time	Alpha (Fluid Mechanics)
10.30 – 10.45	193. Investigating The Aortic Dissection Hemodynamic Parameters Using Numerical Simulation <i>Ryo Takeda</i>
10.45 – 11.00	032. Design of Gravitational Radial Vortex Water Turbine for Low Head Micro-Hydro Power Application <i>Irwanda Pungkiarto and Vivien Djanali</i>
11.00 – 11.15	065. The Performance Augmentation of Savonius Wind Turbin Using Staggered Cylinder Circular as Passive Flow Control <i>Gunawan Sakti, Triyogi Yuwono and Wawan Aries Widodo</i>
11.15 – 11.30	072. A Numerical Study for The Prediction of Unmanned Aerial Vehicle Aerodynamic Performance Based on Dihedral and Tip-Twist Angles of Wing <i>Adi Susanto, Arif Wahjudi and Wawan Aries Widodo</i>
11.30 – 11.45	074. A Numerical Study for Prediction of Unmanned Aerial Vehicle Aerodynamic Performance Based on Chord Tip and Offset of the Wing <i>Fitriana Firdaus, Arif Wahjudi and Wawan Aries Widodo</i>
11.45 – 12.00	098. The Bulb Concept in Drag Reduction on Pentamaran <i>Wiwini Sulistyawati and Purwo Joko Suranto</i>
12.00 – 12.15	128. Stent Geometry Optimization for In-stent Restenosis Prevention through Fluid-Structure Interaction Analysis <i>Varien Janitra Nuralif Susanto, Katsuhiko Sasaki, Shinya Honda and Ryo Takeda</i>

Breakout room: Beta (Energy Conversion)

Time	Beta (Energy Conversion)
10.30 – 10.45	022. The Effect of Biomass & Coal Cofiring on The Flue Gas Temperature Profile in a 350 MW Class Pulverized Coal-Fired Power Plant <i>Alfian Muhammad Reza, Muhammad Arif Susetyo and Firman Bagja Juangsa</i>
10.45 – 11.00	045. Bioconversion of Industrial Cassava Solid Waste (Onggok) to Bioethanol Using a Saccharification and Fermentation process <i>Soeprijanto Soeprijanto, Afan Hamzah and Saidah Altway</i>
11.00 – 11.15	084. Production of Bioethanol from Corn Straw by Co-Immobilization of <i>Saccharomyces cerevisiae</i> and <i>Aspergillus niger</i> in Na-Alginate <i>Karenina Anisya P, Petra A, Shinta Dewi, Yuliana Dewi, Muhammad Dimas, Afan Hamzah and Arief Widjaja</i>
11.15 – 11.30	108. Domestic Waste Incinerator Design with Bio-Mass Fuel <i>Vendy Antono, Roswati Nurhasanah and Arief Suardi Nur Chairat</i>
11.30 – 11.45	124. Numerical Study of the Effect of Excess Air Variation and Biomass Amount at Co-Firing Process for Tangential Coal Pulverized Boiler <i>Aryo Wicaksono and Bambang Arip Dwiyantoro</i>
11.45 – 12.00	164. Effect of the addition of combustion air on emissions in a diesel dual fuel engine with CPO biodiesel and CNG fuels <i>Dori Yuvenda, Bambang Sudarmanta, Arif Wahjudi and Rozy Aini Hirowati</i>



# ICOME 2021

Time	Beta (Energy Conversion)
12.00 – 12.15	136. Analysis of The Characteristic and Performance Development of Coconut Biodiesel <i>Tri Vicca Kusumadewi and Digdo Listyadi Setyawan</i>

## Breakout room: Delta (Material)

Time	Delta (Material)
10.30 – 10.45	014. Risk-Based Integrity Management System of Oil Tanker Hull Structure Due to Corrosion <i>Henry Kurniawan, Trika Pitana and Nurhadi Siswantoro</i>
10.45 – 11.00	017. Effect of Electrodes Er 410, Er 630 And Er 309 With Lacing Wire Ph 17-4 Last Stage Low Pressure Steam Turbine Blade on Weld Strength <i>Acep Moi Kokong, Rizky Haura Nindya Safitri and Suwarno Suwarno</i>
11.00 – 11.15	087. Effect of HVOF Groove Air Cap Nozzle on Cr3C2-20NiCr Coating Characteristics <i>Erie Martides, Husaini Ardy, Budi Prawara, Vincent, Edy Riyanto and Endro Junianto</i>
11.15 – 11.30	088. Effect of Stand of Distance (SOD) of Abrasive Water Jet Cutting processes on the Corrosion Properties of Material Implant Stainless Steel 316L <i>Teguh Dwi Widodo, Rudianto Raharjo and Redi Bintarto</i>
11.30 – 11.45	101. Effect of Cladding and Natural Aging to the Mechanical Property, Electrical Conductivity and Corrosion Resistance of Aluminium Alloy 2024 for Aircraft Wing Skin Application <i>Helena Carolina Kis Agustin and Indra Sidharta</i>
11.45 – 12.00	154. Corrosion Behavior of Hastelloy C-276 in Hydrochloric and Sulfuric Acid <i>Sri Hastuty, Anang Widiatmoko, Toto Sudiro, Muhammad Awwaluddin and Poppy Puspitasari</i>
12.00 – 12.15	165. Formation of Protective and Hardening Coatings on Reinforcing Steels <i>Vira Anishchenko, Victor Skachkov, Olga Berezhna, Roman Volyar, Vladislav Rummyantsev, S.A. Vodennikov and Olga Vodennikova</i>

## Breakout room: Gamma (Design)

Time	Gamma (Design)
10.30 – 10.45	005. Straightness Geometric Error Assessment for CNC Milling Machine <i>Herman Budi Harja, Anisa Nurbaniah, Novi Saksono and Andi Noviandi</i>
10.45 – 11.00	066. Study Normal Modes of Half Wing N219 Aircraft using Computational Method <i>Mirna Sari, Harus Laksana Guntur and Muchamad Bayu Sakti Pratama</i>
11.00 – 11.15	094. Macrostructure and Shear Strength Analysis on Cu-Al Joint of Micro Friction Stir Spot Welding <i>Hakam Muzakki, Ikrom Millaili, Ahmadi Ahmadi, Suwarsono and Jefri S Bale</i>
11.15 – 11.30	071. Multi-objective optimization in surface grinding of SKD 61 tool steel under dry and minimum quantity lubrication conditions (MQL) Using Backpropagation Neural Network and Teaching Learning Based Optimization <i>Dinny Harnany, M. Khoirul Effendi, H.C. Kis A, Sampurno, Rachmadi Norcahyo and Bobby Oedy S</i>



# ICOME 2021

Time	Gamma (Design)
11.30 – 11.45	112. The Effects of Taper Pin and Two-Step Pin in the Micro Friction Stir Spot Welding (mFSSW) of AA1100 Weld Thin Plate on Its Fatigue Strength <i>Ario Sunar Baskoro, Gatot Prayogo, Mohammad Azwar Amat, Muhammad Shadani Pahlevi and Rafi Ahmad Eshandra (1)</i>
11.45 – 12.00	144. SAND as Granular Damper Material to Increase Stability Limits During Turning of Steel Pipe <i>Suhardjono, Arif Wahyudi and Sampurno</i>
12.00 – 12.15	153. Excavator Bucket Failure Analysis Due to Operational Loading <i>Muhammad Thoriq Aziz and Julendra Bambang Ariatedja</i>

## Breakout room: Kappa (Manufacture)

Time	Kappa (Manufacture)
10.30 – 10.45	102. PV On Grid Charging Station for Electric Scooter : Design and Fabrication <i>Arif Indro Sultoni, Aneke Rintiasti, Aan Anto Suhartono and Zainal Panutup Aji</i>
10.45 – 11.00	113. Fluid Absorption of Hybrid Composite for Brake Lining Materials <i>I Ketut Adi Atmika, I Gusti Agung Kade Suriadi, I Nyoman Sutantra and I Dewa Gede Ary Subagia</i>
11.00 – 11.15	137. Experimental of stacking sequences modes of Basalt fabrics and glass fiber reinforced epoxy hybrid composites; under Tension Loads <i>I.D.G Ary Subagia, N. Sutantra and Yonjig Kim</i>



# ICOME 2021

Thursday, August 26<sup>th</sup>, 2021 – Parallel Session 4

Breakout room: Alpha (Fluid Mechanics)

Time	Alpha (Fluid Mechanics)
12.45 – 13.00	114. Numerical Studies of Square Edge and Quadrant Edge Orifice Flow Meter Performance with Different Diameter Ratios and Reynolds Numbers <i>Sutardi and Reinaldhy Aditya L Z</i>
13.00 – 13.15	002. Experimental Study on a Side-by-side Configuration of Two Rigid Cylinders Wrapped Around by Triple Helical Rods with Gaps <i>Rudi Walujo Prastianto and Bagas Pumbarino</i>
13.15 – 13.30	046. Numerical Study of the Generator Lubricant Cooler Air-Side Flow to Increase the Reliability of GTG # 1.3 PLTGU Muara Karang <i>Aris Kurniawan, Sutardi Sutardi and Vivien Suphandani</i>
13.30 – 13.45	047. Numerical Study Effect using Low Rank Coal on Flow Characteristics, Combustion and Furnace Exit Gas Temperature (FEGT) on Tangentially Fired Pulverized Coal Boiler 350 MW <i>Arief Laga Putra, Wawan Aries Widodo and Vivien S. Djanali</i>
13.45 – 14.00	056. Numerical Study of Emissions on DDF Engine with 20% CNG with Variation on Compression Ratio <i>Betty Ariani, I Made Ariana and Aguk Zuhdi M.Fathallah</i>
14.00 – 14.15	057. Numerical Study of Gas Mixing Effect On Block 3 & 4 Muara Tawar's Gas Turbine Combustion Stability <i>Danan Tri Yulianto, Bambang Sudarmanta and Atok Setiawan</i>
14.15 – 14.30	106. Aerodynamic Optimization of Prototype FSAE Vehicle Through Biomimetic Approach <i>Jing Wen Regina Ang, Kok Hing Chong, Muhammad Rafiq Mirza Bin Julaihi and Chin Voon Charlie Sia</i>
14.30 – 14.45	192. Numerical Study for Evaluating Effect of Mass Flow Rate Toward Particle Circulation Rate on Seal Pot in Circulating Fluidized Bed Boiler <i>Nur Ikhwan and Denny Oktavianto</i>
14.45 – 15.00	175. Modelling and Sensitivity Analysis of Heat Transfer Enhancement in Double Pipe Heat Exchanger using Nanofluid <i>Avita Ayu Permanasari, Muhammad Taufiq Affandi, Poppy Puspitasari and Sukarni</i>

Breakout room: Beta (Energy Conversion)

Time	Beta (Energy Conversion)
12.45 – 13.00	194. Tar Reduction in A Three Stage Refuse Derived Fuel Gasification System by Adjusting Intake Air Ratio <i>Bambang Sudarmanta</i>
13.00 – 13.15	021. The effect of temperature controller on the gasification performance using downdraft gasifier with three-stages gasifying agent <i>Sigit Mujiarto, Bambang Sudarmanta and Hamzah Fansuri</i>
13.15 – 13.30	029. An Experimental Study on the Effect of Three-Stage Air Intake Using Temperature Control System on the Performance of Refuse Derived Fuel (RDF) Gasification <i>Harsono Harsono, Bambang Sudarmanta and Sigit Mujiarto</i>





# ICOME 2021

Time	Beta (Energy Conversion)
13.30 – 13.45	041. Experimental Study Combustion Air Optimization to Increase Efficiency due to Changes in Coal Quality with Variation of Load in Labuan Steam Power Plant <i>Adriska Simon Prayoga, Atok Setiyawan and Wawan Aries Widodo</i>
13.45 – 14.00	110. Multi Objective Optimization of Combustion Parameters to Improve Efficiency Boiler Coal Fired Steam Power Plant Using Taguchi – Assignment of Weight <i>Handoyo Widhy Wasisto and Arif Wahyudi</i>
14.00 – 14.15	127. The Analysis of Biogas Production from Mixed Cow Dung with Watermelon Rind as an Alternative Fuel <i>Faisal Manta, Dobby Suanggana and Putra Dilto Tondok</i>
14.15 – 14.30	138. Horowitz-Metzger Kinetic Analysis of Coconut Shell Waste Combustion using Thermogravimetric Technique <i>Sukarni Sukarni, Agus Andika Putra, Ardianto Prasetyo, Avita Ayu Permanasari and Poppy Puspitasari</i>
14.30 – 14.45	143. Thermogravimetric and Kinetic Analysis on Peat Combustion through Coats-Redfern Fitting Model <i>Ardianto Prasetyo and Sukarni Sukarni</i>
14.45 – 15.00	134. Changes the Governor Valve Operation Mode to Improve Efficiency High Pressure Turbine <i>Aripin Gandi Marbun, Ary Bachtiar Krishna Putra and Bambang Sudarmanta</i>

## Breakout room: Delta (Material)

Time	Delta (Material)
12.45 – 13.00	187. Fuel Cell Power Module for Electric Forklift with Integrated Metal Hydride Hydrogen Storage System <i>Ivan Tolj</i>
13.00 – 13.15	020. Root Cause Failure Analysis of Tube Lower Header Waterwall Boiler <i>Acep Moi Kokong, Rizali Ahmadin and Suwarno Suwarno</i>
13.15 – 13.30	023. The Effect of Alkali Treatment and Particle Size on Sound Absorption Coefficient of Particleboards Made from Oil Palm Frond <i>Budi Istana, Sutikno, Putu Suwarta and I Made Londen Batan</i>
13.30 – 13.45	031. Analysis of the Effect Oxide Scale Tube Boiler on the Remaining Life 600 MW Coal Power Plant <i>Diki Purwadi, Suwarno Suwarno and Vivien Suphandani</i>
13.45 – 14.00	036. Prediction of Crack Propagation on Impeller Blade Induced Draft Fan 2A at Pacitan Power Plant <i>Wedha Adji Laksana, Sutikno Sutikno and Putu Suwarta</i>
14.00 – 14.15	049. Failure Analysis of L-1 Blade Low Pressure Steam Turbin Capacity 220 MW <i>Wahyu Pribadi, Fahmi Mubarok and Atok Setiyawan</i>
14.15 – 14.30	131. Failure Analysis of High-Pressure Economizer Tube in Heat Recovery Steam Generator at Muara Tawar Power Plant Blok 5 <i>Hendra Gunawan Susanto, Fahmi Mubarok, Ika Dewi Wijayanti and Josia Perdamenta Ginting</i>



# ICOME 2021

Time	Delta (Material)
14.30 – 14.45	163. Influence of Cryogenic Quenching During Solution Annealing Treatment of AISI 316L for Implant Materials <i>Fahmi Mubarak, Zuli Ainun Zariyah and M Mukaromah</i>
14.45 – 15.00	183. Briquetting Pressure Roles in Selective Reduction Process of Limonitic Nickel Ore <i>Fakhreza Abdul, Sungging Pintowantoro, Frederick Geovan Liris Limbong Rare and Yuli Setiyorini</i>

## Breakout room: Gamma (Design)

Time	Gamma (Design)
12.45 – 13.00	173. Numerical Study on Dynamic Stabilities Prediction in A Small Unmanned Aerial Vehicle <i>Arif Wahjudi, Adi Susanto and Wawan Aries Widodo</i>
13.00 – 13.15	003. Risk-based Collapse Analysis of Breasting Dolphin Structure at the Offshore Oil and Gas Terminal due to Increasing the DWT of Tanker Vessel <i>Fatih Azmi, Rudi Walujo Prastianto and Agro Wisudawan</i>
13.15 – 13.30	004. Modularity Designing for Archimedes Screw Turbine Shaft <i>Herman Budi Harja, Fajar Halim Mulyadi, Haris Setiawan and Suyono Suyono</i>
13.30 – 13.45	007. Cavitation Detection of Centrifugal Pumps Using SVM and Statistical Features <i>Berli Kamiel, Taufiq Akbar, Sudarisman Sudarisman, Krisdiyanto Krisdiyanto and Azhim Azmi</i>
13.45 – 14.00	039. Numerical Study on the Stress Distribution Analysis of Two-Planar DKDT Tubular Joint under Variation of Axial Loading Conditions <i>Irma Noviyanti and Rudi Walujo Prastianto</i>
14.00 – 14.15	075. Effect of Number of Slots and Electromagnetic Cores on The Eddy Current Brake Performance: Computational Approach <i>Wahyu Dwi Aprian, Ubaidillah, Muhammad Nizam, Mufti Reza Aulia Putra and Saiful Amri Mazlan</i>
14.15 – 14.30	080. Local Stress Analysis at Critical Tubular Joint of Offshore Wind Turbine Jacket Structure <i>Muhamad Ferdian Hendrawan, Rudi Walujo Prastianto and Daniel M. Rosyid</i>
14.30 – 14.45	083. Optimization Design of Braces for Three-legged Minimum Jacket Offshore Structure <i>I Putu Dipa Dhaneswara, Dr.Eng Rudi Waluyo Prastianto and Prof. Ir. Daniel M. Rosyid</i>
14.45 – 15.00	190. Stress and Fatigue Simulation on Leaf Spring Type with Structural Static ANSYS Approach <i>Pradhana Kurniawan, Andoko Andoko and Femiana Gapsari</i>



# ICOME 2021

Thursday, August 26<sup>th</sup>, 2021 – Parallel Session 5

Breakout room: Alpha (Fluid Mechanics)

Time	Alpha (Fluid Mechanics)
15.15 – 15.30	184. The Application of Machine Learning for the Performance Modelling of Ship Propulsion Systems <i>Wolfgang Busse</i>
15.30 – 15.45	010. Mathematical model of the thermal performance of double-pass solar collector for solar energy application in sierra leone <i>Abu Bakarr Momodu Bangura, Ridho Hantoro, Ahmad Fudholi and Pierre Damien Uwitije</i>
15.45 – 16.00	028. Numerical Study of the Effect of Cooling Air Velocity on Low Pressure Cooler in a Two Stage Reciprocating Air Compressor <i>Verry Mardiananta Arsana, Sutardi Sutardi and Vivien Suphandani Djanali</i>
16.00 – 16.15	040. Aerodynamic Characteristics of the NACA 43018 Wing Airfoil in Take Off Conditions with Slat Clearance and Flap Deflection <i>Setyo H, Sutardi, Wawan Aries Widodo, Nyaris P and Funky</i>
16.15 – 16.30	130. Conceptual Design of Run-of-River Small Hydropower Plants <i>Khairullah Yusuf, Shahlin Sulaiman and Shan Suleiman</i>
16.30 – 16.45	148. Solar Canopy with IoT-Based Single-Axis Solar Tracking System as a Solution for Utilizing Urban Open Parking Area <i>Radix Kautsar Ramadhan, Hafiz Rayhan Gunawan, Galang Adi Saputro and Yohanes</i>
16.45 – 17.00	160. Investigation of Variations in The Arrangement of the Five Blade Runner on The Kaplan Turbine <i>Sirojuddin, Tony Tony and Aam Amaningsih Jumhur</i>

Breakout room: Beta (Energy Conversion)

Time	Beta (Energy Conversion)
15.15 – 15.30	062. Effect of Dexlite and Palm Oil Biodiesel Storage Time on Fuel Properties and Performance of Single Cylinder Diesel Engines <i>Atok Setiyawan, Kuntang Winangun and Vernanda S</i>
15.30 – 15.45	015. Analysis Study of Performance and Reliability Impact in Boiler Through Different Coal Calorific Value <i>Hendra Yudisaputro, Muhammad Nur Yuniarto and Yohanes Yohanes</i>
15.45 – 16.00	019. Analysis of Cooling Water Quality Improvement to Increase Cooling Tower Efficiency at Kamojang Geothermal Power Plant Unit 1 <i>Femi Afriyanti, Tri Yogi Yuwono and Ali Masduqi</i>
16.00 – 16.15	055. Exergy Analysis in Gas Turbine Power Plant with Different Offline Compressor Washing Methods <i>Arif Budiarto, Ary Bachtiar K.P. and Bambang Arip D</i>
16.15 – 16.30	058. Study of the Effect of Changes in Fill Grid Cooling Tower Unit 2 Salak Geothermal Power Plant <i>Yuansah Yuansah, Wawan Aries Widodo and Arif Wahjudi</i>
16.30 – 16.45	059. Exergy Destruction Study the Effect of Air Intake Temperature of Gas Turbine Compressor on Combine Cycle <i>Marzuki, Ary Bachtiar and Christiono Utomo</i>



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Time	Beta (Energy Conversion)
16.45 – 17.00	092. Plant Maintenance Budgeting Prioritization Based On Reliability Prediction of Repairable System <i>Fandi Setia, Agus Wibawa and Muhammad Nur Yuniarto</i>

## Breakout room: Delta (Material)

Time	Delta (Material)
15.15 – 15.30	018. Investigation of Portevin Le-Chatelier Effect of Austenitic Stainless Steel 316L(N) at High Temperature Regimes <i>I Made Wicaksana Ekaputra, Gunawan Dwi Haryadi, Rando Tungga Dewa, Budi Setyahandana and Sy Minh Tuan Hoang</i>
15.30 – 15.45	061. Ballistic Performance of Epoxy-Ramie Composite - SiC Layered Body Armor Using Finite Element Analysis <i>Ahmat Safaat and Sutikno Sutikno</i>
15.45 – 16.00	086. Experimental Study of Sandwich Strength Materials Made from Banana Fibre, As Advance Materials of the Unmanned Mine Sweeper(UMS) Hull <i>Cahya Kusuma, Faikul Himam and Wawan Kusdiana</i>
16.00 – 16.15	141. Various Synthesis Routes, Surface and Magnetic Characters of Nano-sized Mn <sub>0.8</sub> Zn <sub>0.2</sub> Fe <sub>2</sub> O <sub>4</sub> Particles <i>Poppy Puspitasari, Ahmad Taufiq, Sukarni, Avita Ayu Pi, Sri Hastuty and Jeefferie Abd. Razak</i>
16.15 – 16.30	166. Influence Quenching and Tempering Process on the Toughness Properties Steel Pipe 5L Grade B with Electric Resistance Welding <i>Viki Sofyan Hadi, Fahmi Mubarak and Muhammad Fitrullah</i>
16.30 – 16.45	180. 1,3 Butanediol and Curing Time Influences on Thermal, Mechanical Properties and Recovery of Shape Memory Polyuretane as Endovascular Embolization Material <i>Agung Purniawan, Muhammad Evan Fakhri Rusydiansah and Wikan Jatimurti</i>
16.45 – 17.00	182. Mechanical Properties, Microstructural, and Deep Drawing Formability Analysis on The Annealed CuZn35 Brass Alloy for Cartridge Application <i>Widyastuti, Rochman Rochiem, Contardo Ferini Noval and Adhy Prihatmiko Wibowo</i>

## Breakout room: Gamma (Design)

Time	Gamma (Design)
15.15 – 15.30	070. Multi-performance optimization in end milling of GFRP composite using Backpropagation Neural Network and Differential Evolution Algorithm <i>Mohammad Khoirul Effendi, Bobby Soepangkat, Dinny H and Rachmadi</i>
15.30 – 15.45	099. Innovation Model to Improve BOP Transport Performance <i>Mohammad Kurniadi Rasyid, Putu Mahayana Santika and Erik Mubarik Romadhona</i>
15.45 – 16.00	126. Fatigue Detection System Based on Heart Rate and Eye Blink Equipped with Email and Buzzers Alerts to Increase Health Workers Productivity <i>Vivi Bella Callista, Mochammad Fadhel Firnanda, Rewila Fajar Anugraheni and Alief Wikarta</i>



The 5<sup>th</sup> International Conference on Mechanical Engineering

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Co-organized by Dept. of Mechanical Engineering, National Central University, Taiwan

# ICOME 2021

Time	Gamma (Design)
16.00 – 16.15	150. Influence of Tool Rotation and Surface Roughness on The Shear Strength of Nylon 6 - SS 304 Dissimilar Joint Resulted by Friction Lap Welding <i>Wahono, Irfan Arnanda, Agus Suyetno, Aminnudin Aminnudin, Abu Saad Ansari and Yanuar Rohmat Aji Pradana</i>
16.15 – 16.30	174. Friction Stir Welding Process Optimization on 4 Tool Pin Geometries with Process Parameters and Shoulder Concave Angle in 6005A-T6 Aluminium Alloy Joining <i>Niko Adrisenna Pontjonoto, Agus Sigit Pramono, Arif Wahjudi, I Made Londen Batan and Mulyadi</i>
16.30 – 16.45	177. The Influence of the Tool Concave Shoulder Angle on Heat Generation in The Stir Friction Welding Process with AA6061-T561 materials <i>Mulyadi, Agus Sigit P, I Made Londen, Arif Wahjudi and Niko A</i>
16.45 – 17.00	156. Automatic Number Plate Recognition Application for Metropolitan's Toll Road Payment System <i>Deanova Ghivari Alzamora, Habib Saifuddin Fathoni, Vivi Bella Callista and Alief Wikarta</i>