

[006]Proceedings and Program : International  
Exchange and Innovation Conference on  
Engineering & Science : IEICES 2020

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バージョン :

権利関係 :



## Conference Program

### International Exchange and Innovation Conference on Engineering & Sciences IEICES 2020

#### Oct. 22<sup>nd</sup> (Thursday)

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10:00 – 10:05 Welcome Speech: **Assoc. Prof. Osama Eljamal**  
IEICES 2020 Chair  
*Interdisciplinary Graduate School of Engineering Sciences, Kyushu University*

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#### Session 1

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**Session Chair** **Relebohile Mokete**  
**Co-chair** **Bipasha Singha**

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10:05 – 10:35 Keynote Speech: **Advances in Nanofluids as Advanced Coolants for Proton Exchange Membrane (PEM) Fuel Cells.**  
*Assoc. Prof. Wan Ahmad Najmi bin Wan Mohamed, Mechanical Engineering, Universiti Teknologi MARA (UiTM), Malaysia*

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10:35 – 10:50 **Conductivity of Gadolinium (III) Oxide (Gd<sub>2</sub>O<sub>3</sub>) in Hydrogen-containing Atmospheres.**  
*M. Khalid Hossain, Kyushu University, Japan.*

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10:50 – 11:05 **Surface Relaxation of W(110) and 2D Growth of B Studied by Low Energy Electron Diffraction and Auger Electron Spectroscopy.**  
*Shahadat Hossain, Kyushu University, Japan.*

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11:05 – 11:20 **Simulation-based Optimum Models for Type-I(a) and Type-I(b) IUPAC Classified Adsorption Isotherms.**  
*Md. Matiar Rahman, Kyushu University, Japan.*

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11:20 – 11:35 **Thermal Conductivity Enhancement of Metal-organic Frameworks Employing Mixed Valence Metal Doping Technique.**  
*Israt Jahan, Kyushu University, Japan.*

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11:35 – 11:50 **Electrical Power Estimation of Thermoelectric Cement Composites with Inclusion of Nanostructured Materials.**  
*Sampad Ghosh, Kyushu University, Japan.*

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**11:50 – 13:20 Lunch Break**

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#### Session 2

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**Session Chair** **Khaoula Bensaida**  
**Co-chair** **Ramadan Eljamal**

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13:20 – 13:35 **Dissolution and Release Behavior of Hydrogen Isotopes from Barium-Zirconates.**  
*M. Khalid Hossain, Kyushu University, Japan.*

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13:35 – 13:50 **Wideband Circularly Polarized Metamaterial-based Antenna employing Metasurface Structure.**

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	<i>Samia Tabassum, Chittagong University of Engineering &amp; Technology (CUET), Bangladesh.</i>
13:50 – 14:05	<b>Bandwidth and Gain Improvement of a Circularly Polarized Metamaterial-Based Antenna Employing Square Ring-Shaped Defected Ground Structure.</b> <i>Anayna Shil, Chittagong University of Engineering &amp; Technology (CUET), Bangladesh.</i>
14:05 – 14:20	<b>Effect of Nanoparticle Concentration on the Specific Heat Capacity and Thermal Stability of Graphite Nanoparticle-Based Molten Salt.</b> <i>Nusrat Jahan Salim, Bangladesh University of Engineering and Technology, Bangladesh.</i>
14:20 – 14:35	<b>A High Gain Dual Band Microstrip Patch Antenna Design Implementing Rectangular Slotted Electromagnetic Band Gap Structure.</b> <i>Urmi Das, Chittagong University of Engineering &amp; Technology (CUET), Bangladesh.</i>
14:35 – 14:50	<b>Monte Carlo Simulation and Experimental Determination of Tissue Phantom Ratio for Megavoltage Photon Beam.</b> <i>Noor Mohammed Rasel, Comilla University, Bangladesh.</i>
14:50 – 15:05	<b>Applications of Different Turbulence Models in CFD Simulations of Mixed Flow Hydraulic Pump.</b> <i>Muhammad Tahir Jamil, College of Agriculture Science and Engineering, Hohai University, China.</i>

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### Session 3

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<b>Session Chair</b>	<b>Ibrahim Maamoun</b>
<b>Co-chair</b>	<b>Omar Falyounaa</b>

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15:05 – 15:35	<b>Keynote Speech: Investigating Energy-efficient Air-conditioning Options for Agricultural and Livestock Applications</b> <i>Asst. Prof. Muhammad Sultan, Laboratory for Energy and Env. Engineering Research Department of Agricultural Engineering Bahauddin Zakariya University, Pakistan</i>
15:35 – 15:50	<b>Investigating Applicability of Heat-driven Desiccant Dehumidification System for Shelf Life Improvement of Fruits and Vegetables.</b> <i>Muhammad Bilal, Bahauddin Zakariya University, Pakistan.</i>
15:50 – 16:05	<b>Lab-scale Study of Desiccant Dehumidification System for Poultry Shed Air-conditioning in Pakistan.</b> <i>Muhammad Aleem, Bahauddin Zakariya University, Pakistan.</i>
16:05 – 16:20	<b>Study on Desiccant Dehumidification System Using Experiments and Steady-state Model.</b> <i>Muhammad Ishaq, Bahauddin Zakariya University, Pakistan.</i>
16:20 – 16:35	<b>Evaporative Cooling Systems for Thermal Comfort of Foreign Cattle Breeds: THI Evaluation and System Feasibility.</b> <i>Hafiz Sifat Ullah, Bahauddin Zakariya University, Pakistan.</i>

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16:35 – 16:50	<b>Study on Zero Energy Evaporative Cooling Chamber for Agricultural Products Storage.</b> <i>Muhammad Khalid, Bahauddin Zakariya University, Pakistan.</i>
16:50 – 17:05	<b>Investigation of Direct and Indirect Evaporative Cooling Options for Greenhouse Air Conditioning in Multan (Pakistan).</b> <i>Hadeed Ashraf, Bahauddin Zakariya University, Pakistan.</i>
17:05 – 17:20	<b>Study on an Evaporative Cooling Vest for Farm Workers.</b> <i>Aarish Maqsood, Bahauddin Zakariya University, Pakistan.</i>
17:20 – 17:35	<b>Study on Solid Desiccant-based Air-conditioning for Wet-markets.</b> <i>Muhammad Nauman Ashraf, Bahauddin Zakariya University, Pakistan.</i>
17:35 – 17:50	<b>Spatiotemporal Investigation of Atmospheric Water Harvesting Potential Using Response Surface Methodology for Multan (Pakistan) and Fukuoka (Japan).</b> <i>Muhammad Bilal, Bahauddin Zakariya University, Pakistan.</i>
17:50 – 18:05	<b>Environmental Footprint Reduction of the Built-up Area in Metropolitan Regions by the Smart Development Plan: Lessons for Egypt.</b> <i>Taher Osman, Cairo University, Egypt.</i>
18:05 – 18:20	<b>Cancelability Preservation of Multi Biometrics Based on Quaternion Transform.</b> <i>Mohamed Essam, Future University in Egypt, Egypt.</i>
18:20 – 18:35	<b>Does Urban Concentration Mitigate the Negative Impacts of Electric Energy Consumption on Climate Change? Evidence from Egypt.</b> <i>Taher Osman, Cairo University, Egypt.</i>
<b>18:35 – 18:45</b>	<b>Closing Remark</b>

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## Oct. 23<sup>rd</sup> (Friday)

### Session 1

<b>Session Chair</b>	<b>Shahadat Hossain</b>
<b>Co-chair</b>	<b>Omar Falyouna</b>
09:00 – 09:15	<b>Analysis of the Performance of Microbial Fuel Cell as a Potential Energy Storage Device.</b> <i>Al-Mustasin Abir Hossain, Washington State University, USA.</i>
09:15 – 09:30	<b>Enhancement of power generation in microbial fuel cells (MFCs) Using Iron/Copper Nanoparticles.</b> <i>Khaoula Bensaida, Kyushu University, Japan.</i>
09:30 – 09:45	<b>Innovative Biotechnological Applications of <i>Galdieria Sulphuraria</i>-Red Microalgae (GS-RMA) in Water Treatment Systems.</b> <i>Ibrahim Maamoun, Kyushu University, Japan.</i>
09:45 – 10:00	<b>A Review on Water Conservation and Consumption Behavior: Leading Issues, Promoting Actions, and Managing the Policies.</b> <i>Bipasha Singha, Kyushu University, Japan.</i>
10:00 – 10:15	<b>Removal of Ciprofloxacin from Aqueous Solutions by Nanoscale Zerovalent Iron-based Materials: A Mini Review.</b> <i>Omar Falyouna, Kyushu University, Japan.</i>
10:15 – 10:30	<b>The Involvement of Nanoscale Zerovalent Iron (NZVI) in Anaerobic Digestion of Sludge.</b> <i>Relebohile Mokete, Kyushu University, Japan.</i>
10:30 – 10:45	<b>Comparative Study of Bare and Emulsified Nanoscale Zero-valent Iron for Nitrate and Phosphorus Removal.</b> <i>Ramadan Eljamal, Kyushu University, Japan.</i>
10:45 – 11:00	<b>The Effect of Technological Innovation on Environmental Quality: Accounting Ecological Footprint Indicators for Asian Countries.</b> <i>Shahadat Hosan, Kyushu University, Japan.</i>
11:00 – 11:15	<b>The Impact of Biomass Energy Consumption on Human Development: Evidence from Asian Countries.</b> <i>Shamal Chandra Karmaker, Kyushu University, Japan.</i>
11:15 – 11:30	<b>Numerical Analysis on Turbulence and Air-Water Scalar Transport in Open-Channel Flow Influenced by Thermal Stratification and Surface Shear Stress.</b> <i>Kim SungJin, Kyushu University, Japan.</i>
11:30 – 11:45	<b>Detection of Slums from Very High-Resolution Satellite Images Using Machine Learning Algorithms: A Case Study of Fustat Area in Cairo, Egypt.</b> <i>Muhammad Salem, Kyushu University, Japan.</i>
11:45 – 12:00	<b>Identification of Seulimeum Fault Zone for Sigli - Aceh Toll Road Plan Using 2d Resistivity in Aceh Besar District, Aceh Province – Indonesia.</b> <i>Aswadi, PT Maxpro Kurnia Megah, Indonesia.</i>



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**12:00 – 13:30**

**Lunch Break**

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**Session 2**

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**Session Chair** **Bipasha Singha**

**Co-chair** **Relebohile Mokete**

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13:30 – 13:45 **Effects of Moisture Content on Soil Strength around Kampung Lohan, Ranau, Sabah.**

*Karthigeyan AL. Ramanathan, Universiti Teknologi Malaysia, Malaysia.*

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13:45 – 14:00 **A Review on Tensile Behavior of Different Kinds of Fiber Reinforced Concrete.**

*Rohit Chakraborty, Ahsanullah University of Science and Technology, Bangladesh.*

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14:00 – 14:15 **Re-Evaluation of Pambuang Basin as The Potential Hydrocarbon Basin in Western Shield of Kalimantan – Indonesia.**

*Aswadi, PT Mentari Pambuang International, Indonesia.*

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14:15 – 14:30 **Throat to Acoustic Speech Mapping for Spectral Parameter Correction using Artificial Neural Network Approach.**

*Subrata Kumer Paul, Rajshahi University, Bangladesh.*

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14:30 – 14:45 **Performance Analysis of Different Classifiers Used in Detecting Benign and Malignant Cells of Breast Cancer.**

*Mst. Alema Khatun, Dhaka Commerce College, Bangladesh.*

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14:45 – 15:00 **Difference between Non-Newtonian Carreau and Casson Blood Viscosity Models to Predict Hemodynamics in Idealized Eccentric Arterial Stenosis: Large Eddy Simulation Modeling.**

*Shamudra Dey, Shahjalal University of Science and Technology, Bangladesh.*

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15:00 – 15:15 **Experimental Study of NACA 0012 Airfoil with Slanted Drills Through the Body.**

*Nogib Anwar Zafi, Military Institute of Science and Technology, Bangladesh.*

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**Session 3**

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**Session Chair** **Ramadan Eljamal**

**Co-chair** **Khaoula Bensaïda**

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15:15 – 15:45 **Keynote Speech: Aerobic Granular Sludge Technology: its application, resource recovery and future.**

*Professor Gulsum Yilmaz, Environmental Engineering, Istanbul University-Cerrahpasa, Turkey.*

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15:45 – 16:00 **Numerical and Experimental Analysis of Pool Boiling Heat Transfer Using Graphene Nanofluid.**

*Sooraj K M, Kyushu University, Japan.*

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16:00 – 16:15 **Determination of Flow Characteristics and Performance Analysis of the Non-rotating & Rotating Cylinder.**

*Towsibur Rahman, Military Institute of Science and Technology, Bangladesh.*

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16:15 – 16:30 **Effect of Fuel Orientation on the Performance of Air Curtains in Confining Fire and Smoke Propagation in Informal Shopping Malls.**



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*Md Arif Mahmud Shuklo Shoshe, Ahsanullah University of Science and Technology, Bangladesh.*

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**Session 4**

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**Session Chair** Omar Falyouna  
**Co-chair** Ibrahim Maamoun

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16:30 – 17:00 Keynote Speech: **Optimization of Mixing in a Chinese Dome Digester for Tropical Regions.**  
*Dr. Abiodun Jegede, Postdoctoral Researcher, Chemical Engineering, Engineering Science, University of Oxford, United Kingdom.*

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17:00 – 17:15 **Assessment of Thermal performance of Transport Refrigeration Vehicles by Modifications in the Compartment Design and Storage Pattern.**  
*Fawaz Imtiaz, Bangladesh University of Engineering and Technology (BUET), Bangladesh.*

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17:15 – 17:30 **Performance of NACA Cambered and Symmetrical Airfoils as Rear Spoilers on Race Car Aerodynamic Drag & Lift: Computational Fluid Dynamics Study.**  
*Shamudra Dey, Shahjalal University of Science and Technology, Bangladesh.*

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17:30 – 17:45 **Full Factorial Experimental Design for Growth of Spirulina Platensis and Valuable Products Enhancement.**  
*Mir Shariful Islam, Kyushu University, Japan.*

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17:45 – 18:00 **Design Optimization, Simulation & Performance Analysis of 100MW Solar Tower Thermal Power Plant in Cox's Bazar, Bangladesh.**  
*Md. Sakib Hossain, Islamic University of Technology, Bangladesh.*

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18:00 – 18:15 **Study on the Induced Voltage in Piezoelectric Smart Material (PZT) Using ANSYS Electric & Fuzzy Logic.**  
*Muhammad Javaid Afzal, Govt. Islamia College, Pakistan.*

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**18:15 – 18:30 Closing Remark & Best Presenter Award**

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7 - 13	<b>Surface Relaxation of W(110) and 2D Growth of B Studied by Low Energy Electron Diffraction and Auger Electron Spectroscopy.</b> <u>Shahadat Hossain</u> , Farhana Jesmin Tuli, Peng Guansong, Takeshi Nakagawa, Seigi Mizuno <i>Kyushu University, Japan</i>
14 - 19	<b>Simulation-based Optimum Models for Type-I(a) and Type-I(b) IUPAC Classified Adsorption Isotherms.</b> <u>Md. Matiar Rahman</u> , Animesh Pal, Bidyut Baran Saha <i>Kyushu University, Japan</i>
20 - 26	<b>Thermal Conductivity Enhancement of Metal-organic Frameworks Employing Mixed Valence Metal Doping Technique.</b> <u>Israt Jahan</u> , Bidyut Baran Saha <i>Kyushu University, Japan</i>
27 - 33	<b>Electrical Power Estimation of Thermoelectric Cement Composites with Inclusion of Nanostructured Materials.</b> <u>Sampad Ghosh</u> , Sivasankaran Harish, Bidyut Baran Saha <i>Kyushu University, Japan</i>
34 - 39	<b>Dissolution and Release Behavior of Hydrogen Isotopes from Barium-Zirconates.</b> <u>M. Khalid Hossain</u> , Kenichi Hashizume <i>Kyushu University, Japan</i>
40 - 45	<b>Wideband Circularly Polarized Metamaterial-based Antenna Employing Metasurface Structure.</b> <u>Samia Tabassum</u> , Anaynna Shil, Nusrat Jahan <i>Chittagong University of Engineering &amp; Technology, Bangladesh</i>
46 - 51	<b>Bandwidth and Gain Improvement of a Circularly Polarized Metamaterial-Based Antenna Employing Square Ring-Shaped Defected Ground Structure.</b> <u>Anaynna Shil</u> , Samia Tabassum, Nusrat Jahan <i>Chittagong University of Engineering &amp; Technology, Bangladesh</i>
52 - 59	<b>Effect of Nanoparticle Concentration on the Specific Heat Capacity and Thermal Stability of Graphite Nanoparticle-Based Molten Salt.</b> <u>Nusrat Jahan Salim</u> , Md. Ashiqur Rahman <i>Bangladesh University of Engineering and Technology, Bangladesh</i>
60 - 66	<b>A High Gain Dual Band Microstrip Patch Antenna Design Implementing Rectangular Slotted Electromagnetic Band Gap Structure.</b> <u>Urmi Das</u> , Nusrat Jahan <i>Chittagong University of Engineering &amp; Technology, Bangladesh</i>
67 - 72	<b>Monte Carlo Simulation and Experimental Determination of Tissue Phantom Ratio for Megavoltage Photon Beam.</b> <u>N. M. Rasel</u> , S. Purohit, M. S. Rahman, AKM M. H. Meaze <i>Comilla University, Bangladesh</i>



73 - 78	<p><b>Applications of Different Turbulence Models in CFD Simulations of Mixed Flow Hydraulic Pump.</b>  <u>Muhammad Tahir Jamil</u>, Yong Hai Yu, Fiaz Ahmad  <i>College of Agriculture Science and Engineering, Hohai University, China</i></p>
79 - 84	<p><b>Investigating Applicability of Heat-driven Desiccant Dehumidification System for Shelf Life Improvement of Fruits and Vegetables.</b>            Ghulam Hussain, <u>Muhammad Bilal</u>, Muhammad Sultan, Takahiko Miyazaki, Muhammad H. Mahmood, Zahid M. Khan  <i>Bahauddin Zakariya University, Pakistan</i></p>
85 - 91	<p><b>Lab-scale Study of Desiccant Dehumidification System for Poultry Shed Air-conditioning in Pakistan.</b>  <u>Muhammad Aleem</u>, Ghulam Hussain, Muhammad Sultan, Takahiko Miyazaki  <i>Bahauddin Zakariya University, Pakistan</i></p>
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134 - 140	<b>Environmental Footprint Reduction of the Built-up Area in Metropolitan Regions by the Smart development Plan: Lessons for Egypt.</b> <u>Taher Osman</u> , Muhamed Salem <i>Cairo University, Egypt</i>
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149 - 155	<b>Analysis of the Performance of Microbial Fuel Cell as a Potential Energy Storage Device.</b> <u>Al-Mustasin Abir Hossain</u> , Nahian Masud, Mohammad Salam Yasin, Mohammad Ali <i>Washington State University, USA</i>
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204 - 211	<b>The Impact of Biomass Energy Consumption on Human Development: Evidence from Asian Countries.</b> <u>Shamal Chandra Karmaker</u> , Md. Matiar Rahman, Shahadat Hosan, Bidyut Baran Saha <i>Kyushu University, Japan</i>
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219 - 224	<b>Detection of Slums from Very High-Resolution Satellite Images Using Machine Learning Algorithms: A Case Study of Fustat Area in Cairo, Egypt.</b> <u>Muhammad Salem</u> , Naoki Tsurusaki, Ahmed Eissa, Taher Osman <i>Kyushu University, Japan</i>
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231 - 237	<b>A Review on Tensile Behavior of Different Kinds of Fiber Reinforced Concrete.</b> <u>Rohit Chakraborty</u> , Tonmoy Paul, Abu Bakor Siddik Ornob <i>Ahsanullah University of Science and Technology, Bangladesh</i>
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249 - 257	<b>Difference Between Non-Newtonian Carreau and Casson Blood Viscosity Models to Predict Hemodynamics in Idealized Eccentric Arterial Stenosis: Large Eddy Simulation Modeling.</b> <u>Shamudra Dey</u> , Tahsin Ibtida, Chandan Kumar Roy, Nuruzzaman Sakib <i>Shahjalal University of Science and Technology, Bangladesh</i>
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271 - 276	<b>Determination of Flow Characteristics and Performance Analysis of the Non-rotating &amp; Rotating Cylinder.</b> <u>Towsibur Rahman</u> , Ariful Islam <i>Military Institute of Science and Technology, Bangladesh</i>

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305 - 312	<p><b>Design Optimization, Simulation &amp; Performance Analysis of 100MW Solar Tower Thermal Power Plant in Cox's Bazar, Bangladesh.</b>  <u>Md. Sakib Hossain</u>, Soad Shajid  <i>Islamic University of Technology, Bangladesh</i></p>
313 - 318	<p><b>Study on the Induced Voltage in Piezoelectric Smart Material (PZT) Using ANSYS Electric &amp; Fuzzy Logic.</b>  <u>Muhammad Javaid Afzal</u>, Farah Javaid, Shahzadi Tayyaba, Muhammad Waseem Ashraf, M. Khalid Hossain  <i>Govt. Islamia College, Pakistan</i></p>