



Second International Conference on
Energy Systems for Sustainable Development
February 21-23, 2018



2ND INTERNATIONAL CONFERENCE ON

ENERGY SYSTEMS FOR SUSTAINABLE DEVELOPMENT (ESSD 2018)



DEPARTMENT OF CHEMICAL ENGINEERING
COMSATS INSTITUTE OF INFORMATION
TECHNOLOGY, LAHORE

● FEBRUARY 21-23, 2018

ESSD-2018

Conference PROGRAM



ORGANIZED BY

Department of Chemical Engineering, CIIT, Lahore.

CONFERENCE VENUE

COMSATS Institute of Information Technology (CIIT)

Address: Defence Road, Off Raiwind Road, Lahore.

Tel: +92(042)-111-001-007, Ext. 123

Email: ESSD@ciitlahore.edu.pk

LANGUAGE

The official conference language is English.

REGISTRATION HOURS

Wednesday, February 21

8:30 AM – 9:30 AM

IMPORTANT CONTACTS

Registration:	Engr. Tariq Mehmood Raza (0092-300-6952062)
Accommodation:	Engr. Muhammad Akmal Rana (0092-345-7353392)
Transportation:	Dr. Abdul Razzaq (0092-300-4123743)

ESSD 2018

PROGRAM

The technical program includes invited plenary and keynote lectures, oral sessions and poster presentations.

ORAL PRESENTATIONS

Oral presentations are scheduled for 12 minutes of presentation and 3 minutes of Q&A.

All presentations should be in PowerPoint or PDF formats. A laptop and LCD projector will be available in all sessions. Each presenter is requested to bring the presentation in a USB storage device and upload it to the laptop before the session begins. All presentations will be destroyed at the end of the session.

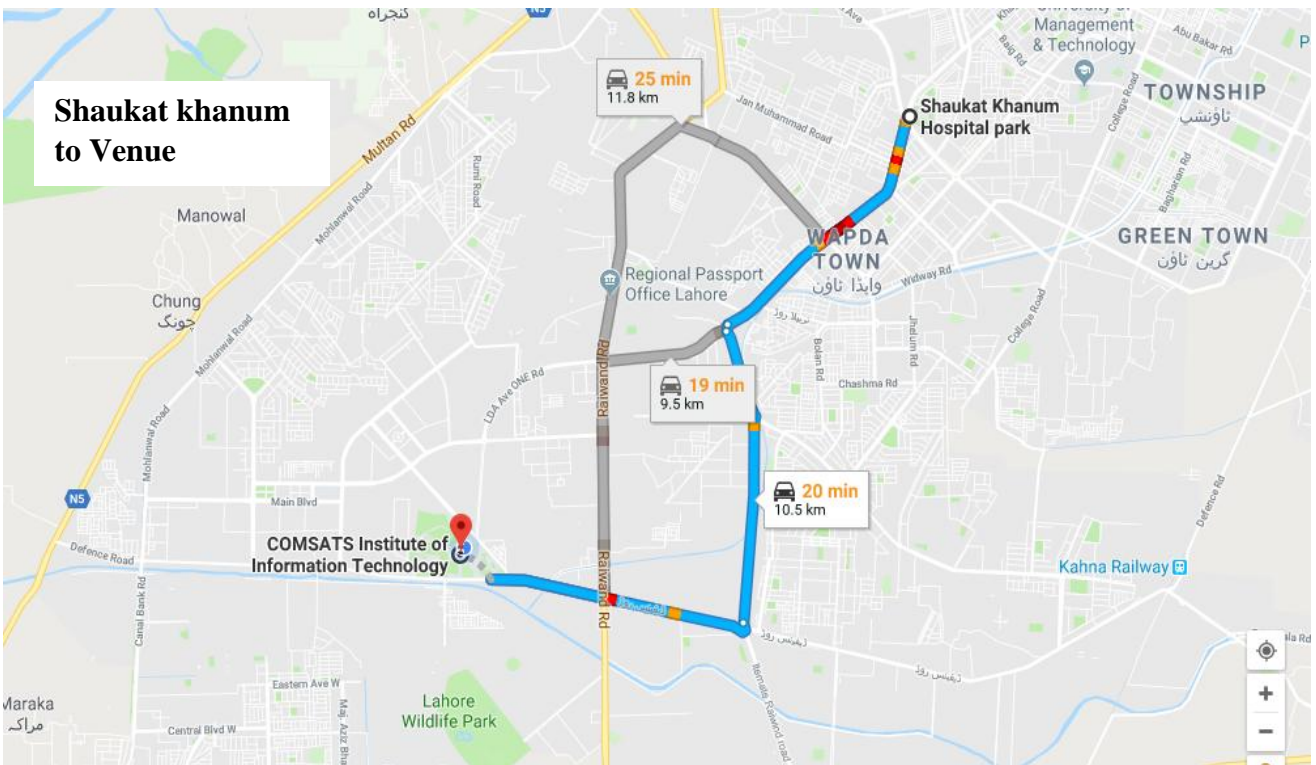
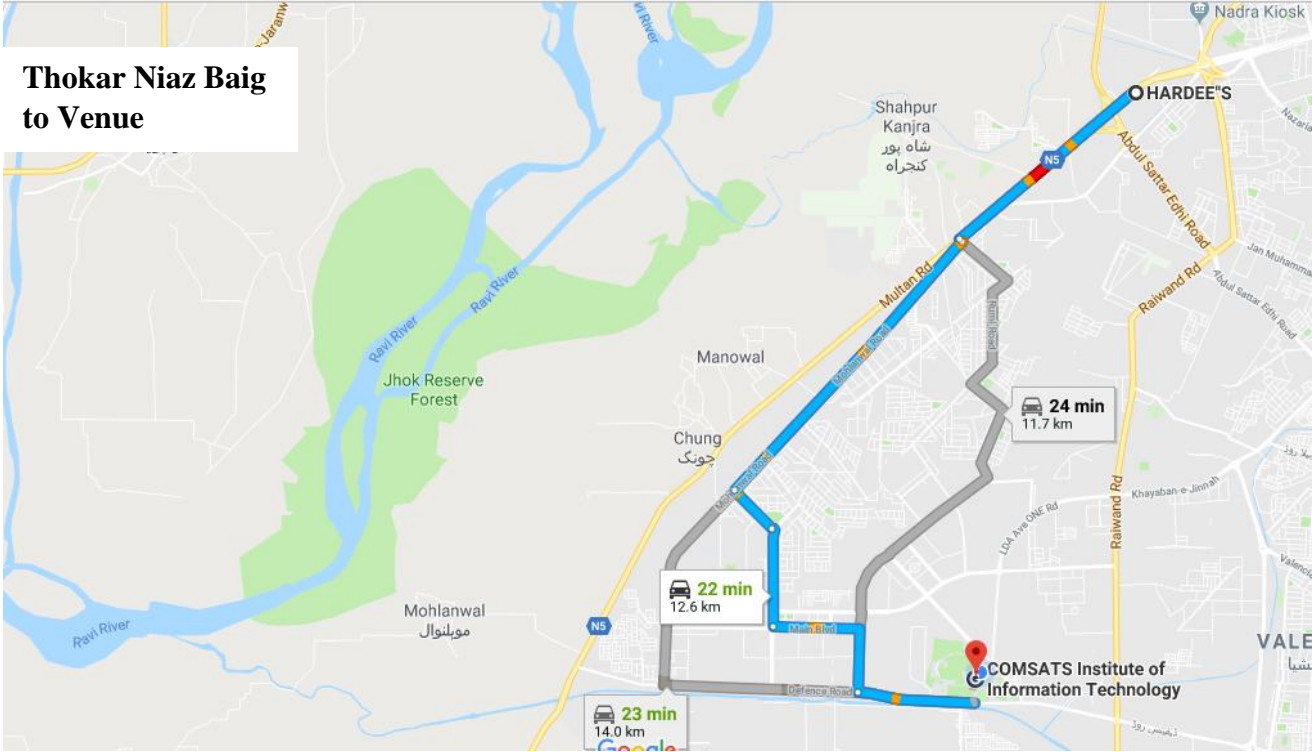
We urge all presenters to use the provided laptop for presentation so as to minimize changeover times.

Since we have a very tight and fully packed program, we request all the delegates to be punctual and respect the allocated timeslots.

In case of absence of some presenter, next presenter shall be called for presentation.

POSTER SESSION

The dimensions of the poster board will be 594 mm (Width) x 841 mm (Height) (or equivalently 23.3 in (W) x 35 in (H)). This corresponds to A1 size in portrait layout. Posters are to be put up according to the assigned Paper IDs.



Prof. Dr. Zainuddin Abdul Manan
Universiti Teknologi Malaysia, Malaysia



Prof. Dr.-Ing. Martin Kaltschmitt
Technische Universität Hamburg-Harburg, Germany



Prof. Dr. M. Asif
Glasgow Caledonian University, UK



Prof. Dr. Ahmad Naim Ahmad Yahaya
Universiti Kuala Lumpur, Malaysian



Invited Speakers

Prof. Dr. Muhammad Abid

Director
Interdisciplinary Research Center
Prof. & Chairman, Department of Mechanical Engineering
COMSATS Institute of Information Technology, Wah Campus, Pakistan

Prof. Dr. Abdul Waheed Bhutto

Dean
Faculty of Engineering
Dawood University of Engineering and Technology, Karachi, Pakistan

Prof. Dr. Muhammad Najam Khan Malghani

Dean
Faculty of Engineering & Architecture
Balochistan University of Information Technology,
Engineering and Management Sciences
Quetta, Pakistan

Dr. Munir Ahmad

Chief Scientist-II
Member (Natural Resources Division)
Pakistan Agricultural Research Council
Islamabad, Pakistan

Prof. Dr. Muhammad Younas

Professor & Chairman
Department of Chemical Engineering
University of Engineering & Technology Peshawar, Pakistan

Prof. Dr. Shahid Munir

Director
Centre for Coal Technology, University of the Punjab Lahore, Pakistan

Prof. Dr. Saeed Gul

Associate Professor
Department of Chemical Engineering
University of Engineering & Technology Peshawar, Pakistan

Detailed Program

Wednesday, February 21

08:30 – 09:30	Registration
09:30 – 10:00	Inauguration/ Opening Ceremony 09:30 Recitation of Holy Quran 09:35 Welcome Address by Conference Chair 09:40 Address of Guest of honour 09:50 Address of Chief Guest 10:00 Vote of Thanks by Director, CIIT Lahore
10:10 – 10:40	Coffee/Tea Break
	Plenary Session-I Venue: Seminar Room – A Block
10:40 – 11:30	<i>Driving reforms and innovation in energy sustainability via a university living lab</i> Prof. Dr. Zainuddin Abdul Manan Universiti Teknologi Malaysia
11:30 – 12:15	<i>Benzene exposure among tanker worker during unloading of petrol at gas station</i> Prof. Dr. Ahmad Naim Bin Ahmad Yahaya Universiti Kuala Lumpur, Malaysia

ESSD 2018

12:15 – 13:00	<i>Biomass-coal co-combustion to overcome energy crisis in Pakistan</i>	
	Prof. Dr. Shahid Munir University of the Punjab Lahore, Pakistan	
13:00 – 14:30	Lunch Break	
	Technical Session I Venue: Seminar Room-Block-A Session Chair: Prof. Dr. Zainuddin Abdul Manan Co-Chair: Prof. Dr. Asad Ullah Khan	Technical Session II Venue: Room A-6 Session Chair: Prof. Dr. Ahmad Naim Ahmad Yahaya Co-Chair: Prof. Dr. Zulfiqar Ali
14:30 – 15:00	Invited Talk: <i>Energy systems for sustainable agriculture production in Pakistan</i> <div style="text-align: right;">Dr. Munir Ahmad Pakistan Agricultural Research Council, Islamabad</div>	Invited Talk: <i>Electricity generation through wastewater treatment</i> <div style="text-align: right;">Prof. Dr. Saeed Gul University of Engineering and Technology, Peshawar</div>
15:00 – 15:15	<i>Analysis of physicochemical characteristics of rice straw pretreated with sodium hydroxide (ID: 41)</i> <div style="text-align: right;">Muhammad Junaid Khalid NUST, Islamabad</div>	<i>Design and development of advance metering infrastructure for residential purpose (ID: 76)</i> <div style="text-align: right;">Sajjad Haider Zaidi PNEC, NUST Karachi</div>
15:15 – 15:30	<i>Comparison between conventional and novel techniques for extraction of concentrated oils (ID: 67)</i> <div style="text-align: right;">Uzair Tariq UET, Peshawar</div>	<i>A novel method of health monitoring of electrical equipment for smart grid technology (ID: 77)</i> <div style="text-align: right;">Mudasir Hussain Buledi PNEC, NUST Karachi</div>
15:30 – 15:45	<i>Retrofitting for automation of HVAC system in mechanical engineering department (ID: 62)</i> <div style="text-align: right;">Muhammad Rizwan MUET Jamshoro</div>	<i>Second order generalized integrator based phase lock loop for single phase grid connected roof top PV systems (ID: 81)</i> <div style="text-align: right;">Hassan Zahid Butt NUST, Islamabad</div>

ESSD 2018

15:45 – 16:00	<p><i>Synthesis and application of Cu based MOF as a CO₂ adsorbent (ID: 95)</i></p> <p style="text-align: right;">Junaid Khan USPCAS-E-NUST, Karachi</p>	<p><i>Excess lithium stored LiFePO₄ (LFP) synthesized by a novel reflux method (ID: 73)</i></p> <p style="text-align: right;">Aqsa Yasmin University of Science and Technology, China</p>
16:00 – 16:30	Tea/Coffee Break (Networking + Poster Presentation)	
	<p>Technical Session III</p> <p>Venue: Seminar Room-Block-A</p> <p>Session Chair: Prof. Dr. Saeed Gul Co-Chair: Prof. Dr. Noaman-ul-Haq</p>	<p>Technical Session IV</p> <p>Venue: Room A-6</p> <p>Session Chair: Prof. Dr. Abdul Waheed Bhutto Co-Chair: Prof. Dr. Murid Hussain</p>
16:30 – 16:45	<p><i>Improvement of waste water treatment efficiency using electrical discharge plasma ozonation (ID:116)</i></p> <p style="text-align: right;">Ainy Hafeez COMSATS Lahore</p>	<p><i>Technical evaluation of scope of linear fresnel technology in Pakistan (ID: 102)</i></p> <p style="text-align: right;">Saad Tahir NUST, Islamabad</p>
16:45 – 17:00	<p><i>Home energy management system (ID: 86)</i></p> <p style="text-align: right;">Hamna Rawish Air University, Islamabad</p>	<p><i>Synthesis of alumina/polysulfone nano composite membrane for copper ions removal from wastewater (ID: 110)</i></p> <p style="text-align: right;">Muhammad Ayaz UET, Peshawar</p>

ESSD 2018

Thursday-22 February

Plenary Session-II		
Venue: Seminar Room – A Block		
09:30 – 10:10	<i>Renewables within the German electricity supply system status, experiences, lessons learned, and actions to be taken</i> Prof. Dr.-Ing. Martin Kaltschmitt Technische Universität Hamburg-Harburg, Germany	
	Technical Session V Venue: Seminar Room-Block-A Session Chair: Prof. Dr.-Ing. Martin Kaltschmitt Co-Chair: Dr. Muhammad Yasin	Technical Session VI Venue: Room A-6 Session Chair: Dr. Munir Ahmad Co-Chair: Prof. Dr. Moeen-ud-Din Ghauri
10:10 – 10:40	Invited Talk: <i>Experimental and numerical studies of bolted flanged pipe joints for safe strength and sealing (An overview of the progress)</i> Prof. Dr. Muhammad Abid COMSATS Institute of Information Technology, Pakistan	Invited Talk: <i>Emerging membrane technologies for the development of innovative hybrid processes</i> Prof. Dr. Mohammad Younas University of Engineering and Technology, Peshawar
10:40-11:10	Invited Talk: <i>Production of biodiesel through catalytic transesterification of jatropha oil</i> Prof. Dr. Muhammad Najam Khan Malghani BUITMS, Quetta	Invited Talk: <i>Supporting biomass energy to advances modern energy services in Pakistan</i> Prof. Dr. Abdul Waheed Bhutto Dawood University of Engineering & Technology, Karachi
11:10-11:30	Tea/Coffee Break (Networking + Poster Presentation)	

ESSD 2018

	Technical Session VII Venue: Seminar Room-Block-A Session Chair: Prof. Dr. Muhammad Younas Co-Chair: Prof. Dr. Aqeel Ahmed Bazmi	Technical Session VIII Venue: Room A-6 Session Chair: Prof. Dr. Muhammad Abid Co-Chair: Dr. Muhammad Shahzad Khurram
11:30 -11:45	<i>Microbial enhanced oil recovery and field trials (ID: 21)</i> <div style="text-align: right;">Muhammad Asim Saeed DUET, Karachi</div>	<i>Experimental and analytical study of a concentric heat exchanger using CuO nanofluid (ID: 23)</i> <div style="text-align: right;">Rasikh Tariq HITEC, Taxila</div>
11:45 – 12:00	<i>Design of wind tracking wind turbine with multi-cylinder generation (ID: 24)</i> <div style="text-align: right;">Muhammad Iftikhar Hussain UET, Lahore</div>	<i>Amine modification of Cu based MOF for CO₂ adsorption applications (ID: 99)</i> <div style="text-align: right;">Junaid Khan USPCAS-E-NUST, Islamabad</div>
12:00 – 12:15	<i>Grid integration of micro hydro power plants: major requirements, key issues and challenges (ID: 37)</i> <div style="text-align: right;">Waqas Ali UET, Lahore</div>	<i>An attempt to forecasts the enhancement of oil recovery by using microbes (ID:36)</i> <div style="text-align: right;">Tahmina Fatima Siddiqui DUET, Karachi</div>
12:15 – 12:30	<i>Analysis of novel maisotsenko cycle applications in power and energy systems (ID: 38)</i> <div style="text-align: right;">Daniela Abigail Hernandez Lopez Arco Technology, Mexico</div>	<i>Successful solutions against barriers to renewable energy development in Pakistan (ID: 34)</i> <div style="text-align: right;">Muhammad Rizwan UAF, Faisalabad</div>
12:30 – 12:45	<i>Photovoltaic solar energy system, a dominant and ultimate source of energy for developing countries (ID:39)</i> <div style="text-align: right;">Safa Khalid UAF, Faisalabad</div>	<i>Effect of reduced graphene oxide as counter electrode material and low-cost natural dye as photo sensitizer on dye-sensitized solar cells (ID: 43)</i> <div style="text-align: right;">Maleeha Anwer NED, Karachi</div>
12:45 – 13:00	<i>Thermodynamic optimization of air bottoming cycle for waste heat recovery (ID: 44)</i> <div style="text-align: right;">Abubakr Ayub CUST, Islamabad</div>	<i>Performance enhancement of N₂ single expander liquefaction process for offshore LNG production (ID: 56)</i> <div style="text-align: right;">Muhammad Abdul Qayyum Yeungnam Univeristy, Korea</div>

ESSD 2018

13:00 – 14:00	Lunch Break	
	Technical Session IX Venue: Seminar Room-Block-A Session Chair: <i>Professor. Dr. Mohammad Younas</i> Co-Chair: <i>Dr. Abrar Faisal</i>	Technical Session X Venue: Room A-6 Session Chair: <i>Prof. Dr. Muhammad Asif</i> Co-Chair : <i>Dr. Asim Laeeq Khan</i>
14:00 – 14:15	<i>Design and fabrication of a low cost solar water desalination plant for coastal and remote areas (ID: 45)</i> Hashim Hasnain Hadi BUEITMS, Quetta	<i>Scope of flywheel energy storage system in a fitness centers of Pakistan as a back-up energy supply (ID: 16)</i> Sadaf Zeeshan UCP, Lahore
14:15 – 14:30	<i>Exceptionally alkaline stable and highest fuel cell performance imidazolium-type anion exchange membranes (ID: 68)</i> Muhammad Aamir Shehzad UET, Lahore	<i>Lithium ion cell modeling for electric vehicle: a step towards zero carbon emission (ID: 70)</i> Rida Fatima NUST, Islamabad
14:30 – 14:45	<i>La₄NiLiO₈ as solid state electrolyte for next generation Li-ion batteries (LIBs) (ID: 71)</i> Aqsa Yasmin University of Science and Technology, China	<i>Design of multivariable PID controller; a comparative study (ID: 97)</i> Anum Khawaja MUET, Jamshoro
14:45 – 15:00	<i>Simulation of thermal performance of cool roof through building engineering system software (ID: 93)</i> Aftab Ahmed Sahito MUET, Jamshoro	<i>Development of talc as an alternative of zirconium silicate in ceramic tile glaze (ID: 75)</i> Murtaza Khan UET, Peshawar

ESSD 2018

15:00 – 15:15	<i>Efficient power generation using vertical axis wind turbine (ID: 88)</i> Abdul Wasy Air University, Islamabad	<i>A study of thermal stratification for pressurizer surge line with different turbulence models and flow velocities (ID: 108)</i> Abdullah USPCAS-E-NUST, Karachi
15:15-15:30	<i>Solar energy and its thermal application in Pakistan (ID: 46)</i> Sadia Tariq Hamdard University	<i>Pakistan's energy crisis: economic or administrative issue? (ID: 14)</i> Humaira Tabassum VU, Lahore
	<i>Economic comparison of various pervaporation based ethanol recovery schemes for syngas bio-refinery (ID: 4)</i> Azqa Khalid COMSATS Institute of Information Technology, Lahore	
15:30 – 16:00	Tea/Coffee Break (Networking + Poster Presentation)	
Plenary Session-III Venue: Seminar Room – A Block		
16:00 – 16:30	<i>Optimized application of solar PV to address energy challenges in Pakistan</i> Prof. Dr. Muhammad Asif School of Engineering and Built Environment The Glasgow Caledonian University, UK	
16:30 – 17:00	<i>Working sessions closing remarks & prize distribution</i>	

Friday-23 February

Session I	
09:30 – 04:30	Round table discussion

Poster Presentations

Sr. #	Paper ID	Presenter	Affiliation	Abstract Title
1	Paper_03	Sohail Zafar Qureshi	AJKU, Muzaffarabad	Public ownership
2	Paper_22	Saeed Nawaz	DUET, Karachi	Pakistan's shale gas play
3	Paper_26	Ammara Kaynat	MUET, Jamshoro	Electricity theft- a well known problem of Hyderabad
4	Paper_28	Abid Ali Dogar	UMT, Lahore	Photovoltaic based PWM inverter using experimental approach
5	Paper_29	Suliman Khan	BUET, Khuzdar	To investigate the effects of recycled coarse concrete aggregate obtained from locally available demolished concrete on the properties of concrete
6	Paper_35	Hatif Bin Abdul Majeed	USPCAS-E, NUST,	On proportional resonant Controller for voltage dip mitigation using a dynamic Voltage Restorer
7	Paper_40	Tahmina Fatima Siddiqui	DUET, Karachi	An analysis of the effect of carbon dioxide injection in the low rank coals
8	Paper_51	Rameez Saqib Khan	MUET, Jamshoro	Managing occupational health & safety in small and medium size construction companies in Hyderabad
9	Paper_52	Noman Bashir	CUST, Islamabad	To convert a conventional (large size) domestic building into a smart building by using information communication technologies
10	Paper_55	Kinza Qadeer	Yeungnam University, Korea	Design optimization of single mixed refrigerant LNG process using metaheuristic runner-root algorithm
11	Paper_58	Arif Hussain	Yeungnam University, Korea	Optimal design of ethylbenzene process using column with side-reactor configuration
12	Paper_59	Shahzeb Memon	MUET, Jamshoro	Sustainability of green buildings: opportunities and challenges
13	Paper_60	Mohammad Adnan Gulshan	NUST-Karachi	Home area network
14	Paper_63	Micaiah Das	UET Peshawar	Simulating a simplified model of a biodiesel production plant using COCO ChemSep; software analysis
15	Paper_64	Danish Ahmad Peerzada	PNEC NUST	Sensor-less machine control
16	Paper_69	Rida Fatima	NUST, Islamabad	A review on renewable energy integration's effects on frequency and power system stability

ESSD 2018

17	Paper_74	Muhammad Aamir Shehzad	UET, Lahore	Outstandingly acid recovery through graphene oxide sheets-type anion exchange membranes
18	Paper_79	Muhammad Awon	NUST, Islamabad	Optimized solution for a PMUs placement in a power system for complete network observability
19	Paper_82	Mian Yahya Gul	UET, Peshawar	Comparative study of conventional and microwave assisted pyrolysis of corncob
20	Paper_83	Hassan Zahid Butt	NUST, Islamabad	PV integration with grid and anti-islanding protection - a review
21	Paper_87	Hina Nadeem	Air university, Isd.	Variable frequency drive for operating the induction motor
22	Paper_89	Ali Zaman	Air university, Isd.	Wireless power sensor profiling
23	Paper_90	Moiz Uddin	Univeristy of Balochistan, Quetta	Fabrication of magnetic nanorodes of cobalt by controlling the barrier layer of anodic aluminum oxide
24	Paper_96	Rawash Asif	PNEC NUST, Karachi	Brain computer interface
25	Paper_100	Muhammad Altaf	UET, Peshawar	Recycling of wastes in to composites
26	Paper_104	Yasir Abbas	COMSATS, lahore	Potential of renewable energy resources in Pakistan
27	Paper_109	Abdullah	USPCAS-E NUST	To study over all downward slope of pressurizer line for thermal stratification
28	Paper_111	Fahad Javed	COMSATS, Lahore	Microbubble mediated mass transfer for production of ethyl acetate
29	Paper_112	Zufishan Shamair Attari	COMSATS, Lahore	High CO ₂ selective 1-Butyl-3 methylimidazolium tetrafluoroborate based ionic liquid membrane
30	Paper_113	Muhammad Umer Khan	PNEC-NUST	Molecular communication : Data transfer using alcohol molecules
31	Paper_114	Naveed Ahmad	COMSATS, Lahore	Energy economized oleic acid esterification accelerated by microbubbles technology
32	Paper_115	Sidra Yasin	COMSATS, Lahore	Development of advance oxidation Process by using micro-reactor for wastewater treatment
33	Paper_117	Zaman Tahir	COMSATS, Lahore	Bio-MOF-11 based mixed matrix membranes for gas separation
34	Paper_119	Mawahid Ali Khokhar	SMME, NUST	Desiccant based evaporative air conditioning system (Aab-O-Hawa)
35	Paper_120	Bazla Sarwar	COMSATS, Lahore	Coal characterization: a gap analysis

ESSD 2018

Major Sponsor



Industrial Collaborators/Sponsors



Tandlianwala Sugar Mills Ltd

Aqua Regia (Water Treatment Company)

Technical Services Collaborators/Sponsors



Sentron Asia International



AF Consultants



Research Groups

Biomass Conversion Research Centre (BCRC)

Catalysis and Materials Group

Environmental Research Group

PRESTIGE-Process & Energy Systems Engineering Centre

Polymer and Composite Materials Group

Membrane Systems Research Group

Energy Research Centre

Microfluidics Research Group

Bio-energy & Environmentally Sustainable Membrane Technology Research Group (BEST)