



5<sup>th</sup> International Anatolian Energy Symposium 24-26 March 2021, Trabzon/TURKEY

Start		End		Welcome Remarks		
9:30		9:40		Prof. Burhan ÇUHADAROĞLU (Conference Chairman)		
9:40		9:50		Prof. Hamdullah ÇUVALCI (President of KTU)		
9:50		10:00		Prof. Genççağ PÜRÇEK (Dean of School of Engineering)		
10:00		10:10		Dr. M. Suat HACISALİHOĞLU (Chairman of the Trabzon Chamber of Commerce and Industry)		
10:10		10:40		<b>Keynote Speaker-1 : Professor Frede Blaabjerg   "Wind Power – A technology enabled by power electronics"</b>		
10:40		10:45		Break		
<b>Parallel Session-1</b>						
		<b>ROOM 1: Heat and Mass Transfer-I</b>		<b>ROOM 2: Energy Technologies-I</b>		<b>ROOM 3: HVAC Systems</b>
		Session Chair: M.E. ARICI		Session Chair: C. TURHAN		Session Chair: A. DALOĞLU
10:45	11:05	A comparative Analysis on Heat Pipe Heat Exchangers and Rotary Regenerative Heat Exchangers K.ÖZDEMİR, E. BÜYÜK ÖĞÜT		Electrochemical Characterization of Temperature Dependence of a Lithium-Ion Battery O. B. SABAN, E. GÜZEL, M. F. SERİNCAN, M. A. ARSLAN		Effect of Vertical Skirt on Airflow and Particle Distributions in an Operating Room A Numerical Study A. AGIRMAN, Y. E. CETİN, M. AVCI, O. AYDIN
11:05	11:25	Numerical Investigation of Flow and Heat Transfer in an Open Cavity E. ÖZGİRGİN YAPICI, E. AYLİ, A. DENİZ		Smart Thermo Design Integrated with Thermoelectric Module E. ÖZTÜRK, A. HİNDİSTAN, K. YILDIZLI		Investigation of BIM (Building Information Modeling) System in Terms of Pressure Energy Losses in Ventilation Systems F. DEMİRTAŞ, C. DEMİRTAŞ
11:25	11:45	An Experimental Study on Overall Heat Transfer Coefficient of Some Wall Brick Models A. RAHMANPARAST, B. ÇUHADAROĞLU, F. E. KAN		Calibration of a Low-Cost Globe Thermometer with Linear Comparative Calibration Method M. F. ÖZBEY, C. TURHAN		On the Use of Natural Ventilation System for Suction of Inhaled Gases in Production Lines for Improved Indoor Air Quality O. KAYAPINAR, O. ARSLAN
11:45	12:05	The Effect of the Staggered Arrangements on the Cooling Performance of the Lithium-Ion Battery Pack A. AKTÜRK, M. E. ARICI, F. E. KAN		Development of a Novel Temperature and Relative Humidity Data Logger A.Y. BAYHAN, C. TURHAN		Air Conditioning System Design of a Archives Storage Facility in the Warm Climate Region M. SUNMAN, Ö. AĞRA
12:05	12:10	Break				
<b>Parallel Session-2</b>						
		<b>ROOM 1: Heat and Mass Transfer-II</b>		<b>ROOM 2: Energy Technologies-II</b>		<b>ROOM 3: Wind Energy</b>
		Session Chair: O. AYDIN		Session Chair: K. BİLEN		Session Chair: M. E. ŞAHİN
12:10	12:30	Mixed Convection in a Vertical Parallel-Plate Microchannel with Viscous Dissipation Effect A. N. ALTUNKAYA, M. AVCI, O. AYDIN		Energy Efficiency Analysis of Turbochargers with Wastegate K. BİLEN, T. TOPCU, D. HAYDARGİL		Investigation of Vertical Axis Wind Turbines and Their Components Design A. BOZTAŞ, O. DEMİRBAŞ, M. E. ŞAHİN
12:30	12:50	Artificial Neural Networks For Drying Characteristics Determination An Application In Fluidized Bed Drying A. YILDIRIM, H. ERGÖK, Ö. AĞRA		Influences of Vanisperse in Negative Active Material on the Performance of Lead-Acid Battery Y. ŞİRİN, Y. EYDEMİR, Ç. AYHAN, E. DEMİRÜREK, E. KOÇ		Design of the Deformable Wind Turbine Blade to Keep Efficiency High Y. GÜLTEKİN, E. KOÇ, T. YAVUZ
12:50	13:10	Experimental Investigation Jet Flow with Different Aluminium Foam Receivers B. ÖZŞAHİN, S. ÇALIŞKAN, K. BİLEN, F. GÜLER		Turkey's Pumped Hydro Storage Status: Current Scheme and Potential S.C. TOKER, G. SOYTÜRK, Ö. KIZILKAN		Design and Aerodynamic Performance Analysis of Micro Wind Turbine Blade K. KAYA, E. KOÇ
13:10	13:30	Experimental Investigation of the Effects of Foam Heat Sinks on Heat Transfer in Cross Flow S. ÇALIŞKAN, U. R. ŞAHİN, F. GÜLER, O. ÖZENÇ		The Thermal Decomposition of the Liquid Hot Water & Alkali Pretreated Cotton Fiber S. ÖZGÜL, G. KOÇAR		The State of Energy in World and Turkey – Wind Energy K. KAYA, E. KOÇ
13:30	13:35	Break				
<b>Parallel Session-3</b>						
		<b>ROOM 1: Heat and Mass Transfer - Nanofluids</b>		<b>ROOM 2: Comput. Heat Transfer &amp; Fluid Dynamics - I</b>		<b>ROOM 3: Heat Insulation - Power Plants and Power Generation</b>
		Session Chair: İ. KURTBAŞ		Session Chair: T. BALI		Session Chair: H.K. ÖZTÜRK
13:35	13:55	Mixed Convection in a Csquare Cavity Filled with Hybrid Nanofluid B. ŞAHİN		Numerical Investigation of the Effect of Obstacles Configuration in the Flow Channel on Heat Transfer İ. KURTBAŞ, M. SENER, S. KIZILCAOĞLU, H. DURAN		Optimization of Insulation Thickness for Pipes in a Low Temperature District Heating Network M. TERHAN
13:55	14:15	Investigation of Boiling Instability in Rectangular Spiral Mini Channel M. SENER, İ. KURTBAŞ, S. KIZILCAOĞLU		Effect of Magnetic Field on Flow and Heat Transfer in Hydrodynamically and Thermally Developing Couette-Poiseuille Flow Between Parallel Plates E. YAĞCI, O. AYDIN, T. BALI		Thermal Comfort Analysis of Historical Mosques. Case Study: The Ulü Mosque, Manisa, Turkey Y. DİLER, C. TURHAN, Z. D. ASLAN, G. G. AKKURT
14:15	14:35	A Review of the Effects of Micro Fin Geometry and Alignment on Flow Boiling Characteristics in Microchannel Heat Sinks B. MARKAL, B. KUL		Numerical Investigation of Naturally Ventilated Facade with PCM Located in Mediterranean Region S. BİRİNCİ, M. SAGLAM, B. SARPER, M. Y. YAZICI, O. AYDIN		Auxiliary Power Generation Design for Power Plants with Using Thermoelectric Generators Ş. K. YENER, B. AKBOĞA, B. ÇETİN
14:35	14:55	Adaptation of the Touhami et al. Correlation for Pool Boiling Outside a Horizontal Tube at Subatmospheric Pressures T. BAKI, D. NEHARI		Numerical Modelling of Heat Sink Suitable for Thermoelectric Module S. ÖZBEKTAŞ, B. TOPAL, B. SUNGUR		Comparative Thermodynamic Analysis of Organic Rankine Cycle with Different Working Fluids O. ARSLAN, İ. CEYLAN
14:55	15:00	Break				
15:00		15:30		<b>Keynote Speaker-2 : Professor Birol KILKIS   "Exergy Solutions in Energy and Global Warming Dilemma"</b>		
15:30		15:35		Break		
<b>Parallel Session-4</b>						
		<b>ROOM 1: Thermodynamics-I</b>		<b>ROOM 2: Comput. Heat Transfer and Fluid Dynamics II</b>		<b>ROOM 3: Global Warming and Environmental Pollution</b>
		Session Chair: A. GÜNGÖR		Session Chair: T. YAVUZ		Session Chair: G. KOÇAR
15:35	15:55	The Performing of Thermodynamic Analysis of R134a Refrigerant and Alternative Refrigerants on Their Application Areas Ö. F. SEL, Ö. HACIHAFAZOĞLU, Ü. AYBEK, A. CİHAN		Numerical Analysis of Aerodynamic and Aeroacoustic Characteristics of Subsonic Rectangular Cavity with Different Aspect Ratios E. KOCAK, E. AYLİ, H. TURKOĞLU		Geopolymer Cement Production in the Struggle to Global Warming S. ÖZEN
15:55	16:15	Development and Thermodynamic Analysis of a Hybrid Evaporative Evaporator Air Cooling System F. ÖZDEMİR, A. GÜNGÖR		A New Vortex Preventing Element Design for Francis Turbines and Comparison of Different Geometric Shapes D. S. SEMERCI, T. YAVUZ		Sustainable Phytoremediation with Energy Crops in Turkey B. BAŞTABAĞ, E. GÖDEKMERDAN, G. KOÇAR

16:15	16:35	Performance Prediction of a Two-Bed Adsorption Chiller Using the Silica Gel Water Working Pair Considering the Effect of Hot and Cold Water Temperatures <i>T. Ü. ERKEK, A. M. S. SHAKIR, M. W. K. JABER, A. GÜNGÖR</i>	Design and Prototyping of Air-to-Ground Smart Fire Extinguisher Ammunition <i>M. TOPTAŞ, M. YILMAZ</i>	Türkiye Şartlarında Fitoremediasyon Tekniğinde Kullanılan veya Kullanılma Potansiyeli Olan Bazı Bitkiler <i>E. YILMAZ, Ö. KILIÇ, M. ZAFAR, M. AHMAD</i>
16:35	16:55	Thermodynamic Investigation of Flat Plate Collector <i>A. B. GÜNDÜZ ALTIOKKA, A. MAVİ, O. ARSLAN</i>	Modelling and Performance of a Thermoelectric Refrigerator <i>H. KEPEKÇİ, E. KOSA, C. EZGİ</i>	
16:55	17:00	Break		
<b>Paralel Session-5</b>				
<b>ROOM 1: Thermodynamics-II</b>		<b>ROOM 2: Comput. Heat Transfer &amp; Fluid Dynamics-III</b>		<b>ROOM 3: Cooling Technologies</b>
Session Chair: <i>Z. YUMURTACI</i>		Session Chair: <i>E. BUYRUK</i>		Session Chair: <i>M. AVCI</i>
17:00	17:20	Performance Analysis of Solar and Geothermal Energy Powered Kalina Cycle <i>M. Ş. ACAR, O. ARSLAN</i>	Effects of Injection and Suction Through a Perforated Circular Cylinder on Some Thermo-Fluid Parameters <i>M. E. VAKHSHOURI, B. ÇUHADAROĞLU</i>	Experimental Investigation of the Pulsating Heat Pipes Having Larger Flow Sections in the Evaporator Region <i>A. CANDERE, B. MARKAL, O. AYDIN, M. AVCI</i>
17:20	17:40	Comparative Techno-economic-environmental Assessment of Biomass Fuelled Integrated Energy Systems <i>P. HEIDARNEJAD, H. GENÇELİ, Z. YUMURTACI</i>	A Numerical Study on Phase Change Material Integrated Borehole Heat Exchanger <i>N. Y. ÇAM, M. A. EZAN, L. BİLİR</i>	Heat Transfer and Thermal Management of Lithium-Ion Battery Pack System with Forced Air Convection <i>I. HOŞ, G. TÜRKAKAR</i>
17:40	18:00	Thermodynamic Analysis of Automobile Brake System <i>A. MAVİ, A. B. GÜNDÜZ ALTIOKKA, O. ARSLAN</i>	Validaton Study of a Naturally Ventilated Solar Facade <i>B. SARPER, S. BİRİNCİ, M. SAGLAM, O. AYDIN</i>	Superelastic Properties of NiTi for new generation cooling technologies <i>S. ÖZKAN, E. DEMİRTAŞ, G. DURAK YÜZÜAK, E. YÜZÜAK</i>
18:00	18:20	ORC Sistemlerinde Kullanılan n-Pentane Akışkanının Pompada Sıkıştırma Oranının Termodinamik Verimlere ve Ekserjii Yıkımına Etkisi <i>M. ALTINKAYNAK</i>	CFD Analysis of Fluid Passing Through Venturimeter <i>C. KİSTAK, F. ÖZGEN</i>	Elastocaloric Properties of the Optimized Ni-Ti Alloy <i>G. DURAK YÜZÜAK, E. YÜZÜAK</i>
<b>End of Day 1</b>				

<b>25.03.2021 (DAY 2)</b>				
Start	End	Second Day Welcome   Assoc. Prof. Ömer Necati CORA (Co-Chairman)		
9:00	9:10	Keynote Speaker-3 : Professor Orhan DURGUN   "Dünya'da ve Türkiye'de Enerji Üretiminin Güncel Durumu ve Türkiye için Çözüm Önerileri"		
9:10	9:40	Break		
<b>Paralel Session-6</b>				
<b>ROOM 1: Fuels and Combustion - Exergy</b>		<b>ROOM 2: Solar Energy-I</b>		<b>ROOM 3: Fuel Cells - Wind Energy - Solar Energy</b>
Session Chair: <i>Z. ŞAHİN</i>		Session Chair: <i>N. ÇELİK</i>		Session Chair: <i>M. ÖZBEY</i>
9:45	10:05	Second Law Analysis of Novel Fractal Structure Heat Exchanger <i>A. B. ÇOLAK, İ. KOTCIOĞLU, O. ARSLAN</i>	Nanoakışkan Kullanılan Parabolik Oluk Tipi Güneş Kolektörlü Organik Rankine Çevriminin Teorik Modellemesi ve Sistem Parametrelerinin İncelenmesi <i>E. KIRTEPE, O. E. TURGUT</i>	Development of a Dynamic System-Level Thermodynamic Model of Solid Oxide Fuel Cell (Sofc) Integrated Gas Turbine (Gt) Power Plant <i>B. M. KAYA, A. C. İNCE, F. BEDİR, M. F. SERİNCAN</i>
10:05	10:25	Engine Performance and Exhaust Emissions of a Spark Ignition Engine Operating on 2.5 % N-Butanol/Gasoline Blend and 2.5 % N-Butanol/Gasoline Blend with 9 % Water Injection to Intake Air <i>Z. ŞAHİN, O. N. AKSU, C. BAYRAM</i>	Exergy Analysis of a Solar Power Plant and Comparison of Production Values with Software <i>B. GÜLMEZ, R. KOSE, O. O. YOLCAN</i>	Manufacturability of Solid Oxide Fuel Cell Metallic Interconnects by Powder Metallurgy Approach <i>A. TOPCU, Ö. F. YALÇIN, B. ÖZTÜRK, Ö. N. CORA</i>
10:25	10:45	Theoretical Investigation of Engine Performance and Exhaust Emissions in Ethanol-fueled Dual-plug SI Engine <i>İ. ALTIN, A. BİLGİN, İ. SEZER</i>	2, 10 and 20 kVA Photovoltaic System Design; Example of Bilecik <i>S. ERZEN, E. AÇIKALP, O. ARSLAN</i>	Wind Energy Potential Assessment of Susurluk Region in Balıkesir <i>A. DÜZCAN, Y. A. KARA</i>
10:45	11:05	Sesame Harvesting Waste: Thermal Characterization and Conversion for Biofuel and Biochar Production <i>E. GÖDEKMERDAN, B. BAŞTABAK, G. KOÇAR</i>	Dynamic Simulation of a Flat Plate Solar Collector System under Hot and Humid Climatic Conditions <i>A. YUMUŞAK, H. GENÇELİ, M. ASKER</i>	Potential for the Use of Solar Energy in the Food Industry <i>D. BAYANA, F. İÇİER</i>
11:05	11:10	Break		
11:10	11:40	Keynote speaker-4 : Assoc. Prof. Barbaros ÇETİN   "Grooved Heat Pipes: Modeling, Experimentation and Applications"		
11:40	11:45	Break		
<b>Paralel Session-7</b>				
<b>ROOM 1: Solar Energy-II</b>		<b>ROOM 2: Energy Management - Occupational Health and Safety in Energy Sector</b>		<b>ROOM 3: Fluid Mechanics-I - Cooling Technologies</b>
Session Chair: <i>K. KAYGUSUZ</i>		Session Chair: <i>M. YILMAZ</i>		Session Chair: <i>O. TURAN</i>
11:45	12:05	Artificial Neural Network Modeling of Parabolic Trough Type Solar Thermal Power Plant <i>D. KILIÇ, O. ARSLAN</i>	Effect of Collection Tank Level on Energy Consumption of Lifting Pumps in Drinking Water Distribution Systems <i>Ü. SEKMEN, M. YILMAZ, Ö. ÖZDEMİR, A. İNCE</i>	Numerical and Experimental Investigation of Air Injection Process with Venturi Pipe Part <i>Ö. F. CAN, T. BAĞATUR, N. ÇELİK</i>
12:05	12:25	Analysis and Design of a Cooling Channel for a Photovoltaic Panel <i>Z. ÖZCAN, M. GÜLGÜN, E. ŞEN, N. Y. ÇAM, L. BİLİR</i>	Lead Acid Batteries for Micro Hybrid Electrical Vehicles – Influence of Different Type Expanders on the Performance of the Negative Plates <i>Y. ŞİRİN, Y. EYDEMİR, Ç. AYHAN, E. DEMİRYÜREK, E. KOÇ</i>	An Energy Efficient Mixed Flow Submersible Pump Design and Computational Fluid Dynamic Processes in a Case Study 7" 110 m3h <i>M. AKDEMİR, M. C. ÇAKMUR</i>
12:25	12:45	Collaborating Sharing Decentralized Solar Energy System in Pakistan <i>S. M. K. SHAH, R. TANZEEL</i>	Ship Energy Efficiency Analysing Approaches: A Case Study <i>O. YILMAZ, T. UYANIK, Y. ARSLANOĞLU</i>	Analysis and Design of an Air to Air Heat Exchanger Used in Energy Recovery Systems <i>H. Ü. ELMACIOĞLU, İ. ÖZSEVGİ, C. KOCABIYIK, N. Y. ÇAM, L. BİLİR</i>
12:45	13:05	Design and Analysis of Evacuated Tube Solar Collector Integrated Supercritical Brayton Cycle for Low-Temperature Applications <i>G. SOYTÜRK, Ş. Ç. TOKER, Ö. KIZILKAN</i>	Rüzgar Enerji Santrallerinde İş Sağlığı ve Güvenliği <i>S. ŞİMŞEK, F. DOĞAN</i>	Magnetic Refrigeration Technology and Applications <i>A. ZAIM, H. ARAS</i>
13:05	13:10	Break		
<b>Paralel Session-8</b>				
<b>ROOM 1: Solar Energy-III</b>		<b>ROOM 2: Energy Management - Hydrogen Energy</b>		<b>ROOM 3: Fluid Mechanics-II - Comp. Heat and Mass Trans.</b>
Session Chair: <i>Y. ARSLANOĞLU</i>		Session Chair: <i>E. F. KENT</i>		Session Chair: <i>L. NAMLI</i>
13:10	13:30	Experimental Investigation of Thermal Gain in PV Panels <i>H. DUMRUL, S. YILMAZ</i>	Parametric Analysis of a Plate, Finned and Cross Flow Heat Exchanger for Heat Recovery in Buildings <i>S. TEKİN, G. TÜRKAKAR</i>	Investigation of Flow Field Characteristics of Synthetic Jet Driven by Half Sinusoidal Signal <i>M. Y. BAYAT, M. SARIOĞLU, Y. E. AKANSU</i>
13:30	13:50	Following the Balloon Temperature of a Solar Water Heater Installed in Oran, Algeria <i>T. BAKI, M. TEBBAL, H. BERREBAH</i>	An Ore Enrichment Plant, The Effect of Operation Optimization of Operators on Production and Energy Efficiency <i>E. BULAT, C. AYGÜN</i>	Bubble Pump Design and Performance Analysis <i>A. DALLOUL, M. ÖZBEY</i>
13:50	14:10	Bidirectional Flyback Based Differential Power Processing Converter for Photovoltaic Applications <i>E. KARAKAŞ, Y. ÖNER, S. KESLER</i>	Exergy and Thermo-economic Analyses of Solar Hydrogen Production and Liquefaction Process <i>T. KOYUN, E. F. KENT</i>	Numerical Investigation and Optimization of the Effect of Heat Transfer and Pressure Drop on the Circuit in Finned Tube Heat Exchangers <i>A. YILDIRIM, Ş. Ö. ATAYILMAZ</i>
14:10	14:30	A Machine Learning Approach for Solar Power Plant Electrical Power Estimation <i>T. UYANIK, O. YILMAZ, Y. ARSLANOĞLU</i>	Hidrojen Tedarik Zinciri ve Türkiye Örneği <i>A. ERDOĞAN</i>	Investigation of Air Flow Inside an Airplane Passenger Cabin <i>L. BİLİR, H. ÇELİK, M. B. ÖZERDEM</i>
14:30	14:35	Break		
14:35	15:05	Keynote speaker-5 : Assoc. Prof. Hafız Ali   "Surface condenser: Heat transfer"		
15:05	15:10	Break		

		<b>Parallel Session-9</b>		
		<b>ROOM 1: Solar Energy-VI</b>	<b>ROOM 2: POSTER SESSION</b>	<b>ROOM 3: Energy Technologies-III</b>
		Session Chair: <i>C. DEMİRTAŞ</i>	Session Chair: <i>F.E. KAN</i>	Session Chair: <i>Ö.N. CORA</i>
15:10	15:30	<b>State of the Art Review on the Cu(InGa)Se<sub>2</sub> Thin-film Solar Cells</b> <i>M.A.OMİD, Ö. N. CORA</i>	<b>Konfeksiyon Makinaları İçin Radyal Blower Tasarımı</b> <i>E.ÇETİNZAFER, S. BALCI</i>	<b>Thermoelectric Thin Film Modules</b> <i>S. ÖZKAN, G. DURAK YÜZÜAK, E. YÜZÜAK</i>
15:30	15:50	<b>A Study of the Effect of Baffles Inside Solar Collector</b> <i>B. GÜLMEZ, A. B. AKSOY</i>	<b>Sensorless Flow Rate and Total Head Measurement of Centrifugal Pumps Operating with Variable Frequency Drive</b> <i>E. KARAKAŞ, Y. ÖNER, S. KESLER</i>	<b>Indigenous Oil Yielding Plants as Energy Sources in Pakistan</b> <i>M. ZAFAR, M. AHMAD, Ö. KILIÇ, M. AHMAD, A.Z. E. YILMAZ</i>
15:50	16:10	<b>Analysis of 100 kW Solar Photovoltaic Power Plant Which Can Be Installed In Trabzon</b> <i>R. KÖSE, A. B. AKSOY, O. O. YOLCAN, B. GÜLMEZ</i>	<b>Thermal Power Plant Emissions and Emission Prevention Studies in Turkey</b> <i>H. ERGÖK, A. YILDIRIM</i>	<b>RF Sputtered TiO<sub>2</sub> Thin Films with Various Deposition Conditions for Triboelectric Friction Layer</b> <i>G. DURAK YÜZÜAK, S. ÖZKAN, E. YÜZÜAK</i>
16:10	16:30	<b>Important Parameters in Solar Power Plant Installation and Analytical Hierarchy Process Analysis of 100 kW Solar Photovoltaic Power Plant Which Can Be Installed In Trabzon</b> <i>B. GÜLMEZ, R.KÖSE, O. O. YOLCAN</i>	<b>Solar Powered Cooler Design</b> <i>H. KORKMAZ, M. E. GAZI, Ö. N. CORA</i>	<b>Comparative Environmental Sustainability of Two Different Sizes of Wind Turbines</b> <i>B. A. TÜRKMEN</i>
<b>Closing Remarks &amp; Farewell</b>				