FINAL PROGAM

"Alternative Energy Sources, Materials & Technologies (AESMT'20)", Varna, Bulgaria

MONDAY (June 8, 2020):

1. Registration: 8:00 - 8:30 h

2. Plenary session:

2.1. **Opening**: 8:30 - 9:00 h;

2.2. **Plenary session:** 9:00 - 11:30 h **(Chair: Aleksandar Georgiev)**

9:00 - 9:30 h; ***Iliya Krastev Iliev (Ruse, Bulgaria):*** I. K. Iliev, A. K. Terziev, H. I. Beloev, I. Nikolaev, A. G. Georgiev. Comparative analysis of the energy efficiency of different types co-generators at large scales CHPs.

9:30 - 10:00 h; ***Soteris Kalogirou (Limassol, Cyprus):*** S. Kalogirou. Renewable Energy Systems: Current Status and Prospects.

10:00 - 10:30 h; ***Henrik Lund (Aalborg, Denmark):*** H. Lund. 100% Renewable Smart Energy Systems.

10:30 - 11:00 h; ***Juan Ramón Morante (Barcelona, Spain):*** J. R. Morante. A dilemma of the energy transition: what can be done with CO2 emissions?

11:00 - 11:30 h; ***Yuehong Su (Nottingham, UK):*** C. Kutlu, A. Ehtiwesh, M. T. Erdinc, G. Yu, Y. Su, S. Riffat. Investigation on operation control parameters of solar organic Rankine cycle: A transient study.

3. Poster session 1: 11:30 - 13:00 h

Bo Cao (Beijing, China): Bo Cao, Weijie Cui, Yixue Chen. Source Terms Estimation and Network Optimization Based on BP Neural Network.

Tao Zhang (Shanghai, China): T. Zhang, Z. W. Yan. Experimental and Theoretical Study on a Low Temperature Heat Pump Sludge Drying System

Mingke Hu (Nottingham, UK): Mingke Hu, Suhendri, Bin Zhao, Xianze Ao, Jingyu Cao, Qiliang Wang, Saffa Riffat, Yuehong Su, Gang Pei. A parametric study on the performance characteristics of an evacuated flat-plate photovoltaic/thermal (PV/T) collector.

Iliyan Trayanov (Sofia, Bulgaria): J. Patel, J. Andharia, A. Georgiev, D. Dzhonova, S. Maiti. A review of phase change material based thermal energy accumulators in small-scale solar thermal dryers.

Jingkang Liang (Kunming, China): Jingkang Liang, Yunfeng Wang, Xu Ji. Effect of desorption pressure on refrigeration performance of solar adsorption refrigeration system with a water-bath adsorbent bed.

Yue Wang (Kunming, China): Yue Wang, Xu Ji, Haiyang Xu, Leilei Yan, Yongyuan Li, Jishu Li. Study on an air humidification-dehumidification system with subatmospheric pressure for desalination.

Leilei Yan (Kunming, China): Leilei Yan, Xu Ji, Haiyang Xu, Yue Wang, Jishu Li. Exergy analysis and performance optimization of adsorption refrigeration system.

Dias R. Umyshev (Almaty, Kazakhstan): D. R. Umyshev, A. M. Dostiyarov, Zh.S. Duissenbek , I. K. Iliev, H. Beloev. Numerical simulation of the effect of the distance between rows of angle stabilizers during separation.

Xiao Ren (Hefei, China): Xiao Ren, Jing Li, Lijun Wu, Gang Pei. Effect of Solar Cells with Different Temperature Coefficients on Photovoltaic/thermal System.

Zaiguo Fu (Shanghai, China): Z. G. Fu, Y. Li, Y. J. Bao, Q. Z. Zhu. Experimental and numerical investigation on a multilayer structured PV/T system Physical Model
Ance Plavniece (Riga, Latvia): A. Plavniece, G. Dobele, A. Volperts, A. Zhurinsh, K. Kaare, I. Kruusenberg, J. Locs. Chemically activated and N-doped hydrochar flakes as a fuel cell catalysts.
Maria P. Aleksandrova (Sofia, Bulgaria): M. P. Aleksandrova, G. D. Kolev, R. Tomov, G. H. Dobrikov, A. K. Singh, K. C. Mohite. Role of the absorber layer in the thin film solar cells with perovskites.
Mila Trayanova (Sofia, Bulgaria): M. Trayanova, R. Atanassova, A. Benderev, E. Haslinger, S. Wyhlidal, P. Kinner. Possibilities for the utilization of highly mineralized water in Central Bulgaria as a source of thermal energy, based on the Austria's experience.
Trevor H. Kwan (Hefei, China): Trevor Hocksun Kwan, Yongting Shen, Gang Pei. Fuel Cell Waste Heat Recovery to Assist Thermoelectric Heater for Combined Heat, Power and Water Production.
Shaoxuan Jin (Kunming, China): Shaoxuan Jin, Qiongfen Yu. Performance analysis of a solar-regenerated dehumidification shutter system.
Zhiqi Zhao (Lund, Sweden): Zhiqi Zhao, Lei Luo, Dandan Qiu, Zhongqi Wang, Bengt Sundén. On the solar air heater thermal enhancement using differently shaped ribs combined with delta-winglet vortex generators.
Malika Ismailova (Almaty, Kazakhstan): A. S. Askarova, S. A. Bolegenova, S. A. Bolegenova, Sh. S. Ospanova, I. E. Berezovskaya, M. E. Ismailova, Zh. K. Shortanbayeva. Computer simulation of liquid fuel combustion in developed turbulence using the soot formation and oxidation model.
Teodor B. Iliev (Ruse, Bulgaria): I. Stoyanov, T. Iliev. An Approach for Optimising the Operation of a Photovoltaic System Using Cogeneration.
Gady Golan (Ariel, Israel): M. Mahrize, S. Zerbib, N. Shahar1, G. Golan. Novel Self-Regulated Pump (SRP) CO2 Capture in a CO2 to Methane system.

4. Afternoon session 1: 13:00 - 15:00 h; Solar and Hybrid Thermal Systems, Hydrogen Energy, Energy Materials Science
13:00 - 13:20 h; ***Xue Li (Nottingham, United Kingdom):*** Xue Li, Yanyi Sun, Robin Wilson, Yupeng Wu. Thermal evaluation of a Crossed Compound Parabolic Concentrator Photovoltaic Window (CCPC-PVW) system.
13:20 - 13:40 h; ***Ayse Fidan Altun (Bursa, Turkey):*** A. F. Altun, M. Kiliç. Dynamic simulation and economic analysis of a hybrid stand-alone power system with hydrogen production and storage for various climates in Turkey.
13:40 - 14:00 h; ***Bachirou Guene Lougou (Harbin, China):*** Bachirou Guene Lougou, Hao Zhang, Boshu Jiang, Yong Shuai, Azeem Mustafa, Jiupeng Zhao, Heping Tan. Modeling of a high-temperature solar-driven thermochemical fuel production system.
14:00 - 14:20 h; ***Burcu Saner Okan (Istanbul, Turkey):*** I. Berktas, A. Caputcu, A. N. Ghafar, P. Fontana, Y. Menceloglu, B. S. Okan. Newly designed graphene based silica hybrid additives as a thermal conductive additive in cementitious grouts.
14:20 - 14:40 h; ***Tatiana Mechkarova (Varna, Bulgaria):*** A. M. Stoyanova, T. M. Mechkarova, M. I. Konsulova-Bakalova, K. K. Yordanov. Investigating heat transfer of manual metal arc hardfacing of low carbon plates.
14:40 - 15:00 h; ***Tatiana Mechkarova (Varna, Bulgaria):*** A. M. Stoyanova, T. M. Mechkarova, M. I. Konsulova-Bakalova, K. K. Yordanov. Underwater twin-arc gas metal arc welding for low-alloy shipbuilding steel.

5. Short break: 15:00 - 15:30;

6. Afternoon session 2: 15:30 - 17:30 h; Energy Materials Science, Storages with Phase Change Materials (PCM)
15:30 - 15:50 h; *S. Zerbib (Ariel, Israel):* S. Zerbib, G. Orr, G. Golan. Open Top Seeding Crystal Growth Control System.
15:50 - 16:10 h; *G. Orr (Ariel, Israel):* G. Orr, A. Goryachev, G. Golan. The effect of sintering regimes on phase distribution in sintered BFO.
16:10 - 16:30 h; *Barbara Larwa (Ferrara, Italy):* B. Larwa, S. Cesari, M. Bottarelli. Study on thermal performance of a PCM enhanced hydronic radiant floor heating system.
16:30 - 16:50 h; *Le Zhao (Kunming, China):* L. Zhao, L. Ming, Q. F. Yu, Y.Zhang, G.L.Li, S.N.Sun, W.E.Kolaly. Phase transition behaviour of low-temperature phase change materials based on Expended Graphite with different pore areas.
16:50 - 17:10 h; *Bilge Saruhan (Cologne, Germany):* Apurba Ray, Delale Korkut, Bilge Saruhan. Direct Sputter-Grown Needle-like Mn/MnOx@Graphite-Foil Electrodes and Ionic Liquid:PPC Electrolytes for Efficient Flexible Solid-State Supercapacitors.
17:10 - 17:30 h; *Qiu Mo (Shanghai, China):* Qiu Mo, Xiuqing Shang, Fang Liu, Qunzhi Zhu. Optimal design for co2 heat pump coupled with hot and cold thermal storages

TUESDAY (June 9, 2020):

1. Morning session 1: 9:00 - 11:00 h; Energy Efficiency
9:00 - 9:20 h; *Ayse Fidan Altun (Bursa, Turkey):* A. F. Altun, M. Kiliç. Dynamic simulation and thermo-economic optimization of a hybrid stand-alone power system for various climates in Turkey.
9:20 - 9:40 h; *Bulbul Ongar (Almaty, Kazakhstan):* Almagul Mergalimova, Bulbul Ongar, Iliya Iliev, Aleksandar Georgiev, Kazima Kalieva, Parassat Bissenbaeyev. Parameters of heat treatment of coal to obtain combustible volatile substances.
9:40 - 10:00 h; *Zhuo Yin (Kunming, China):* Z. Yin, M. Li, X. Lou, G. L. Li, Y. Zhang, L. Wang, X. Y. Zhou, L. Zhao. Experiments on different refrigerants in the direct-contact-heat-transfer refrigeration system with ice storage and dehydrator.
10:00 - 10:20 h; *Kun Li (Kunming, China):* K. Li, M. Li, Y .F.Wang, Y Zhang, W. EI. Kolaly, M. Gao, W. Sun. Effects of dynamics models and characteristic mechanism on Gastrodia elata slices with the hot air drying.
10:20 - 10:40 h; *Eman Abusaada (Istanbul, Turkey):* Eman Abusaada, Volkan S. Ediger. Renewable Energy Transition in the United Arab Emirates.
10:40 - 11:00 h; *Ozay Kas (Istanbul, Turkey):* O. Kas, M. Z. Sogut. Thermo-Economics Optimization of Trigeneration Process Based on Heat Demand Management.

2. Short break: 11:00 - 11:30;

3. Morning session 2: 11:30 - 13:30 h; Solar Photovoltaic Systems, Shallow Geothermal Energy Applications
11:30 - 11:50 h; *Guoliang Li (Kunming, China):* G. L. Li, Y. H. Han, M. Li, X. Luo, Y. F. Xu, Y. F. Wang, Q. F. Yu. Study on matching haracteristics of photovoltaic disturbance and refrigeration compressor in solar photovoltaic direct-drive air conditioning system.
11:50 - 12:10 h; *S. Zarviv (Ariel, Israel):* S. Zarviv, N. Shahar, G. Golan. Converting Carbon Emissions to Methane with PV Solar.
12:10 - 12:30 h; *Gady Golan (Ariel, Israel):* G. Golan, G. Orr. Investigation of Lateral Doped P-i-N Photovoltaic Cell.

12:30 - 12:50 h; *Raimon Bawazir (Izmir, Turkey):* R. O. Bawazir, N. S. Çetin. A Novel Method of Techno-Economic Assessment for Off-Grid PV System Installation in Sana'a-Yemen.
12:50 - 13:10 h; *Javier F. Urchueguía (Valencia, Spain):* Javier F. Urchueguía, Borja Badenes, Miguel A. Mateo Pla, Bruno Armengot, Jose M. Cuevas, Lenin G. Lemus. Techno-economic optimization of ground heat exchanger material and geometric configurations.
13:10 - 13:30 h; *Miguel A. Mateo Pla (Valencia, Spain):* Miguel A. Mateo Pla, Borja Badenes, Bruno Armengot, Jose M. Cuevas, Lenin G. Lemus, Javier F. Urchueguía. Experimental validation of the enhanced thermal efficiency of advanced materials in geothermal borehole heat exchangers (BHEs).

4. Poster session 2: 13:30 - 15:00 h
Yonghang Tai (Kunming, China): Xiaoqiao Huang, Yonghang Tai, Junsheng Shi. A novel method based on clear-sky index for solar irradiance forecasting.
Qiong Li (Kunming, China): Qiong Li, Wenfeng Gao, Wenxian Lin. Numerical investigation of thermal stratification in horizontal solar water tank.
Yonghang Tai (Kunming, China): Bixuan Gao, Xiaoqiao Huang, Junsheng Shi, Yonghang Tai. A novel hybrid solar irradiance forecasting model: a practical case.
Dimitrije Manic (Belgrade, Serbia): D. Manic, M. Komatina, M. Laloševic. Evaluation and Optimization of Office Buildings Energy Performance in Cold Climate.
A. O. Nugymanova (Almaty, Kazakhstan): A. S. Askarova, S. A. Bolegenova, V. Yu. Maximov, S. A. Bolegenova, A. O. Nugymanova. Reduction Harmful Emissions at the Pulverized Fuel Combustion in the Furnace Chamber.
Z. H. Kuai (Shanghai, China): Z.H. Kuai, Ting Yan, S. F. Wu, W. G. Pan. Fabrication and storage/release heat properties of palmitic acid/copper foam phase change materials.
Qunzhi Zhu (Shanghai, China): Liyuan Yuan, Qunzhi Zhu. Performance of a comprehensive cogeneration system of solar power generation and desalination water production.
Yan Li (Shanghai, China): Y. Li, G. Y. You, Q. Z. Zhu, M. L. Di, G. Yue. Numerical Simulation of Paraffin Heat Storage Process in Concentric Tube Heat Exchanger.
Jolanta Šadauskiene (Kaunas, Lithuania): R. Tamašauskas, J. Šadauskiene, M. Šadauskaite. Evaluation of the influence primary energy factor hydropower systems.
Yerzhan Belyayev (Almaty, Kazakhstan): Ye. Belyayev, Z. Abdulina, Ye. Yerdesh, M. Mohanraj, A. Rattner. Solar Assisted Auto-Cascade Heat Pump for Water Heating in the Continental Climates.
Yunlan Li (Taiyuan, China): M. J. Zhang, Y. Qi, X. Chen, S. Q. Niu, Y. L. Li. Stronger Antioxidant and Hepatoprotective Components Generated from Rubiaceae Hedyotis diffusa with Biotinidase in the Field of New Biological Energy Technology.
Yang Huang (Beijing, China): Y. Huang, J. B. Tian, T. R. Fu. Measurement method of high-temperature radiative properties of semi-transparent thermal barrier coatings.
Lazaros Aresti (Limassol, Cyprus): Lazaros Aresti, Paul Christodoulides, Georgios A. Florides. An investigation on the environmental impact of GSHP systems.
Dhivagar Ramasamy (Coimbatore, India): R. Dhivagar, M. Mohanraj. Experimental investigations on performance enhancement of a heat pump assisted regenerative solar still with heat storage materials.
Qiongfen Yu (Kunming, China): Q. F. Yu, G. L. Li, M. Li, X. Ji, Y. F. Wang. Influence of Acid Treatment on Characterization And Methanol Adsorption Coconut-shell Activated Carbon.
Moldir Bodykbayeva (Almaty, Kazakhstan): A. S. Askarova, S. A. Bolegenova, S. A. Bolegenova, Sh. S. Ospanova, M.K. Bodykbayeva, Zh.K. Shortanbayeva, A.A.Tuyakbayev,

N. V. Pilipenko. RANS applications for statistical simulation of air-blast atomization of liquid fuel jets.
Tahir Cetin Akinci (Istanbul, Turkey): Gökhan Erdemir, Tahir Cetin Akinci, Zafer Aslan. Analyses and Forecasting of Solar Energy Potential by Using ANN: A Case Study of Central Anatolia-Turkey.
Gökhan Erdemir (Istanbul, Turkey): Gökhan Erdemir, Ahmet Emin Kuzucuoglu, Fahri Anil Selcuk. A mobile wind turbine design for emergencies in rural areas.

5. Afternoon session 2: 15:00 - 17:00 h: Low-Carbon Technologies, Wind Energy, Electrical Engineering, Energy Efficiency
15:00 - 15:20 h; ***Xaybundith Sengphathith (Kunming, China):*** X. Sengphathith, B.Vongvisith, M. Li, Y. Zhang. Research development and utilization of solar energy for agriculture in Lao PDR.
15:20 - 15:40 h; ***Zhandos Baizhuma (Almaty, Kazakhstan):*** Zh. E. Baizhuma, S. A. Bolegenova, R. K. Manatbayev, A. G. Georgiev, C. Son. Numerical simulations of static VAWT blade icing.
15:40 - 16:00 h; ***A. Brusov (Ariel, Israel):*** A. Brusov, M. Azoulay, G. Orr, G. Golan. Electropolishing of single crystal and polycrystalline aluminum to achieve high optical and mechanical surface for X-ray diffraction.
16:00 - 16:20 h; ***Dorin Lucache (Iasi, Romania):*** Dorin Lucache, Mohammed el Amine Boukli Hacene, Lotfi Karaouzene. Energy efficient design optimization of a Faculty Building.
16:20 - 16:40 h; ***Burak Susoglu (Istanbul, Turkey):*** M. B. Susoglu, V. S. Ediger. Decentralized Energy Applications and Barriers in Turkey.
16:40 - 17:00 h; ***Hüseyin Kurt (Istanbul, Turkey):*** Hüseyin Kurt, Ismail Kiyak, Gökhan Gökmen, Gökhan Koçyigit. Artificial Intelligence Based Outdoor Lighting System Control Design for Smart Cities.