

20th International Workshop for Young Scientists

BioPhys Spring 2021

Programme 18th - 19th May 2021

18th May 2021 (Tuesday)

9:00 – 9:10	Opening of the 20th International Workshop for Young Scientists “BioPhys Spring 2021” – prof. J. Horabik, prof. C. Sławiński and Scientific Committee Members
Session 1 9:10 – 10:10	Energy from renewable sources – part 1 Chairman – prof. Martin Libra
9:10 – 9:20	Farkas I. - New innovations in solar cell and module technologies.
9:20 – 9:30	Kocsány I., Seres I., Farkas I.- Possible use of exergy analysis for PV/T collectors.
9:30 – 9:40	Ajeena A.M., Víg P., Farkas I. - Fundamentals and application of nanofluids in flat plate solar collectors.
9:40 – 9:50	Almadhhachi M., Seres I., Farkas I. - Materials of a solar cell operated hybrid tree.
9:50 – 10:00	Alshibil, A.M.A, Vig P., Farkas I. - Modelling and control of hybrid solar collector systems.
10:00 – 10:10	Bilčík M., Božíková M., Csillag J., Kubík L., Kotoulek P. - Influence of tilt angle to PV system energy production.
10:10- 10:30	Coffee break
Session 2 10:30 – 11:30	Properties of soil and agro-environment Chairman – prof. Istvan Seres
10:30 – 10:40	Kaczor M., Bulak P., Proc K., Bieganowski A. - Applications of <i>Hermetia illucens</i> in industrial and agricultural fields.
10:40 – 10:50	Kubaczyński A., Walkiewicz A., Pytlak A., Brzezińska M. - Methane uptake potential of biochars produced from selected plant wastes.
10:50 – 11:00	Matczuk D., Siczek A. - Factors affecting ammonia volatilization.
11:00 – 11:10	Mącik M., Gryta A., Sas-Paszt L., Frąc M. - Seasonal variations in the genetic diversity of fungal communities in the degraded soil amended with phosphorus biofertilizer.

11:10 – 11:20	Rafalska A., Walkiewicz A. - Soil microorganisms in forest gully soil show various activity along a topographical gradient.
11:20 – 11:30	Rudnik B., Cieřla J., Martyniuk T., Zdunek A. - The effect of N-(n-butyl)thiophosphoric triamide on the selected physical and physicochemical properties of Urea-Ammonium Nitrate solutions.
11:30 - 12:00	Coffee break
Session 3 12:00 – 12:40	Quality of environment Chairman – prof. Ľubomir Kubik
12:00 – 12:10	Seres I., Ākoshegyi S., Kiss G., Csermely Ā., Sivadó D., László Ő., Tőzsér L. - Environmental measurements in the framework of the CanSat Student Satellite Development Project.
12:10 – 12:20	Bálint Ā., László E., Mészáros Cs. - Comparison of heavy metal concentrations measured in the hair samples of residents of “Csepel” and “Erzsébet” districts.
12:20 – 12:30	Szymczak T., Cybulska J., Podleřny M. - Screening of lipase-producing microorganisms.
12:30 – 12:40	Wesołowska M.M., Baranowski P., Schimmelpfennig L. - Modification of nitrogen fertilizers as a way to reduce ammonia emissions.
12:40 – 14:00	Lunch time
Session 4 14:00 – 15:20	Physical properties of materials Chairman – prof. Z. Hlaváčová
14:00 – 14:10	Vig P., Tóth J. - Optics of water droplets on living and non-living materials.
14:10 – 14:20	Csillag J., Bilčík M., Bořikova M. - Quality assessment of selected organic oils by physical methods
14:20 – 14:30	Wajs J., Stasiak M. - Determination of degree of agglomeration and strength of consolidated powder materials.
14:30 – 14:40	Kotoulek P., Bilčík M., Szentesi M., Bořiková M., Csillag J., Kubík Ľ., Kařimírová, V. - Volume specific heat, combustion heat and calorific value of straw pellets and rape waste pellets.
14:40 – 14:50	Horabik J. - Tensile strength of sawdust pellets. Measurements and Discrete Element Method modeling.
14:50 – 15:00	Kubík Ľ., Kařimírová V., Bořiková M., Kunecová, D. - Determination of the compressive and colour properties of the straw fuel pellets.
15:00 – 15:10	Pícha T. - Evaluating of dielectric properties of 3D printing materials: ASA and ABS.
15:10 – 15:20	Tichý M., Kolář V., Müller M. - Strength of shaped adhesive bonds with epoxy-glass fiber composite layer.
15:20 – 15:40	Coffee break

Session 5 15:40 – 16:20	Quality of food materials Chairman – prof. Artur Nosalewicz
15:40 – 15:50	Hlaváčová Z., Hlaváč P., Ivanišová E. - Food quality assessment and electrical properties.
15:50 – 16:00	Babiak W., Szymańska-Chargot M., Wiącek D., Krzemińska I. - Cadmium and lead adsorption on microalgal exopolysaccharide.
16:00 – 16:10	Kłosok K., Welc R., Nawrocka A. - Impact of selected phenolic acids on the secondary structure of gluten network studied by infrared spectroscopy.
16:10 – 16:20	Krekora M., Nawrocka A. - Influence of selected flavonoids and their glycosides on the secondary structure of gluten proteins in a model wheat dough.

16:20 – 17:00	On-line party
----------------------	----------------------

19th May 2021 (Wednesday)

Session 6 9:00 – 10:10	Energy from renewable sources – part 2 Chairman – prof. Istvan Farkas
9:00 – 9:10	Rusirawan D., Farkas I. - Lessons learn from research activities in photovoltaic field –scientific and academic collaborations of ITENAS and MATE.
9:10 – 9:20	Lidyawati L., Hartawan L., Rusirawan D., Farkas I. - Forecasting of PV energy production using time series and machine learning modeling.
9:20 – 9:30	Al-Rabeeah A.Y., Seres I., Farkas I. - Thermal enhancement in parabolic trough solar collector using receiver geometry design and nanofluids.
9:30 – 9:40	Atsu D., Seres I., Farkas I. - Power quality performance assessment of grid-connected microinverter and string inverter photovoltaic systems.
9:40 – 9:50	Permana D.I., Farkas I. - Various typical solar collectors in ORC applications.
9:50 – 10:00	Ali M.H., Kurjak Z., Beke J. - Impact a combination of solar energy and geothermal systems on PV output power.
10:00 – 10:10	Šafránková J., Havrlík M., Beránek V., Libra M., Poulek V., Sedláček J., Belza R. - Operation of PV power plants located in different climatic conditions.
10:10 – 10:30	Coffee break
Session 7 10:30 – 11:30	Physical properties of plant materials Chairman – prof. Józef Horabik
10:30 – 10:40	Chibrikov V., Pieczywek P.M., Zdunek A. - Visualization and structural characterization of plant cell wall hemicelluloses.
10:40 – 10:50	Krysa M., Szymańska-Chargot M. - Influence of the phenolic acids addition on the structure and properties of microfibrillar cellulose and nanocellulose-based composites.

10:50 - 11:00	Malarczyk D., Panek J., Frać M. - LAMP - efficient detection of <i>Phytophthora</i> spp. found in organic strawberry plantations.
11:00 – 11:10	Novák J. - Relative permittivity measurement of chickpea (<i>Cicer arietinum</i> L.).
11:10 – 11:20	Okoń K., Nosalewicz A. - Plant photosynthesis under fluctuating light.
11:20 – 11:30	Pylak M., Oszust K., Frać M. - Early effect of bacterial inoculum on the growth of raspberry plants and the soil enzymatic activity.
11:30 – 12:00	Coffee break
Session 8 12:00 – 13:00	Energy production and consumption Chairman – prof. Dani Rusirawan
12:00 – 12:10	Skorupka M., Nosalewicz A. - Production of maize-based biofuels and ammonia emissions.
12:10 – 12:20	Habtay G., Buzas J., Farkas I. - Performance evaluation of chimney dependent solar dryer for apple drying.
12:20 – 12:30	Machi M.H., Buzas J., Farkas I. - Enhancement techniques of solar air collector performance.
12:30 – 12:40	Petrík T., Uhlíř I. - Influence of rotating machines on the stability of the electrical distribution network.
12:40 – 12:50	Pícha Š., Štekerová V. - Comparison of energy consumption of electric vehicle on different road profiles.
12:50 – 13:00	Štekerová V., Pícha Š. - Comparison of electricity production in the Czech Republic in March 2020 and 2021.
13:00-13:20	Closing BPS 2021 (conclusions, remarks)