

Location of the Workshop:

Engineering Informatics Centre (Room MIK 25)  
Institute of Technology  
Hungarian University of Agriculture and Life Sciences  
Páter K. u. 1., Gödöllő, H-2100 Hungary

Google maps: 47.59254220146795, 19.3648069886929

Google Meet link:

<https://meet.google.com/uhy-jrfr-ppm>



**HUNGARIAN UNIVERSITY OF AGRICULTURE AND LIFE SCIENCES**

29<sup>th</sup> WORKSHOP ON

**ENERGY AND ENVIRONMENT**

PROGRAM

December 7-8, 2023

Gödöllő, Hungary

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**Program**

**December 7 (Thursday)**

14.30-17.00 Registration  
Visiting the Department of Physics  
Visiting the solar installations

**December 8 (Friday)**

08.30-08.45 Opening the Workshop by:  
Prof. I. Farkas Founding Chairman of the Workshop  
Hungarian University of Agriculture and Life Sciences, Gödöllő, Hungary  
Prof. I. Szabó Vice rector for Education and International Relations  
Hungarian University of Agriculture and Life Sciences, Gödöllő, Hungary  
Prof. L. Kátai Deputy director of Institute of Technology  
Hungarian University of Agriculture and Life Sciences, Gödöllő, Hungary

**Session 1**

**Chairmen: Prof. I. Farkas  
Prof. L. Kátai**

08.45-09.00 I. Farkas: PHOTOVOLTAIC TECHNOLOGIES TRANSITION TOWARDS RENEWABLE ENERGY TECHNOLOGIES  
09.00-09.10 D. Rusirawan, I. Farkas: REVIEW ON UTILIZATION OF SOLAR ENERGY IN INDONESIA: NATIONAL TARGET, CURRENT STATUS AND RESEARCH ACTIVITIES  
09.10-09.20 S. Bartha, F. Carvalheiro, L.C. Duarte, N. Antal: DEVELOPING A SUSTAINABLE BIOREFINERY MODEL BASED ON ENERGY WILLOW – FOCUS ON THE PRODUCTION OF ADDED VALUE COMPOUNDS  
09.20-09.30 H. Zsiborács, G. Pintér, N. Hegedűsné Baranyai, A. Vincze, M. Turai, P. Weihs, E. Mursch Radlgruber, J. Eitzinger, C. Gützer, S. Thaler: THE LIMITATIONS OF THE APPLICATION OF RESIDENTIAL BALCONY SOLAR MODULES IN AUSTRIA AND HUNGARY  
09.30-09.40 Ahmed M. Ajeena, P. Vig, I. Farkas: NUMERICAL SIMULATION OF FLAT PLATE SOLAR COLLECTOR USING NANOFLUID  
09.40-09.50 A.M.A. Alshibil, I. Farkas, P. Vig: EXPERIMENTAL PERFORMANCE ASSESSMENT OF SERPENTINE COPPER TUBE-BASED PHOTOVOLTAIC THERMAL MODULE  
09.50-10.00 M. Almadhhcahi, I. Seres, I. Farkas: SHAPING THE FUTURE OF SOLAR: EVALUATING THE POTENTIAL OF SPHERICAL AND HEMISPHERICAL PHOTOVOLTAIC MODULES  
10.00-10.10 A.Y. Al-Rabeeh, I. Seres, I. Farkas: THE USE OF Cu<sub>2</sub>O/WATER NANOFLUID TO IMPROVE THE HEAT TRANSFER PERFORMANCE OF PTC  
10.10-10.20 D.I. Permana, D. Rusirawan, I. Farkas: ORGANIC RANKINE CYCLE POWERED BY SOLAR COLLECTOR: EXPERIMENTAL SETUP PROGRESS  
10.20-10.30 L. Hartawan, D.I. Permana, D. Rusirawan, I. Farkas: ARDUINO-BASED DATA LOGGER FOR SOLAR WATER HEATER SYSTEM  
10.30-10.45 *COFFE BREAK*

**Session 2**

**Chairmen: Prof. P. Weihs  
Prof. D. Rusirawan**

10.45-11.00 P. Weihs, S. Thaler, J. Eitzinger, C. Gützer, E. Mursch-Radlgruber, G. Pinter, H. Zsiborács, A. Vincze, N. Baranyai: USE OF PV FOR DOMESTIC PURPOSES, GARDENING AND AGRICULTURE  
11.00-11.10 I.E. Háber: DESIGN METHODOLOGY FOR AUTONOMOUS HOUSES WITH HYDROGEN ENERGY STORAGE  
11.10-11.20 Maytham H. Machi, I. Farkas, J. Buzás: COMPARATIVE ANALYSIS OF SINGLE PASS AND DOUBLE PASS SOLAR AIR COLLECTORS: AN EFFICIENCY ASSESSMENT  
11.20-11.30 M.H. Ali, Z. Kurják, J. Beke: THE EFFECT OF FORCED AIRFLOW INSIDE THE SOLAR CHIMNEY ON THE PHOTOVOLTAIC MODULE POWER GENERATION  
11.30-11.40 T. Negash, I. Seres, I. Farkas: MAXIMIZING LARGE-SCALE PV INTEGRATION EMPLOYING ENABLING TECHNOLOGIES  
11.40-11.50 K. Halefom, I. Farkas, J. Buzás: MAIN BOTTLENECKS AND OPTIMIZING METHODS OF EXISTING OF SOLAR COOKING METHODS AND TECHNOLOGIES  
11.50-12.00 A.M.M.B. Parenrengi, U.A. Albayumi, D. Rusirawan, I. Farkas: APPLICATION OF AGRIVOLTAIC: INITIAL DESIGN IMPLEMENTATION  
12.00-12.10 G.P. Pratama, U.A. Albayumi, D. Rusirawan, I. Farkas: DESIGN AND REALIZATION OF A DUAL-AXIS SOLAR TRACKER FOR A GENERATOR SOLAR POWER PLANT BASED ON ARDUINO MICROCONTROLLER  
12.10-12.20 A.F. Shaumi, B.P. Manunggal, Sri Wuryanti, D. Rusirawan: PERFORMANCE ANALYSIS OF HELICAL BAFFLE OF SHELL AND TUBE HEAT EXCHANGER USING HEAT TRANSFER RESEARCH INC WITH VARIATION ANGLE  
12.20-12.30 M.H. Ali, Z. Kurják, J. Beke: THE EFFECT OF INTEGRATED SOLAR AIR COLLECTOR ON THE PHOTOVOLTAIC MODULE POWER GENERATION  
12.30-13.30 *LUNCH BREAK*

**Session 3**

**Chairmen: Dr. Cs. Mészáros  
Dr. S. Bartha**

13.30-13.40 Cs. Mészáros, Á. Bálint: RELEVANCE OF THE CHAIN-TYPE SUBSYSTEMS AT INVESTIGATING OF THE MICROSCOPIC STRUCTURE OF LAYER-TYPE SOLAR ELEMENTS  
13.40-13.50 S. Bartha, B. Vajda: SUSTAINABLE BIOECONOMY-BASED STRUCTURE DEVELOPED FOR ROMANIAN RURAL VILLAGE  
13.50-14.00 M.H. Ali, Z. Kurják, J. Beke: THE EFFECT OF THE GEOMETRIC CONFIGURATION OF EARTH-AIR HEAT EXCHANGERS ON THEIR PERFORMANCE  
14.00-14.10 G. Géczy, I. Seres: POSSIBILITIES OF THE NEW GENERATION SILICON PHOTOMULTIPLIERS FOR RADIATION SENSING  
14.10-14.20 K. Aslam, D. Rusirawan: ELECTRICAL AND INSTRUMENT CONTROL BASIC DESIGN FOR COAL-FIRED POWER PLANT 105 MW TO INCREASE PRODUCTION  
14.20-14.30 D. Mulyadi, N. Idayanti, N. Sudrajat, D. Rusirawan: DESIGN OF LOW-SPEED GENERATOR USING PERMANENT MAGNET BONDED NdFeB AS  
14.30-14.40 N. Nugraha, M.P.N. Sirodz, TA Muharram, D. Rusirawan, I. Farkas: DESIGN AND MANUFACTURING OF A BIOMASS PYROLYSIS REACTOR TOBACCO STICKS CAPACITY 25-65 kg  
14.40-14.50 Q.K. Zhu, I. Farkas, J. Buzás: EVALUATING INDIRECT SOLAR DRYING SYSTEM COMPONENT PERFORMANCE USING CFD MODELLING METHODS  
14.50-15.00 N.D. Anggraeni, I. Seres and I. Farkas: IDENTIFYING THE RELATION BETWEEN ENERGY AND FOOD THROUGH OPEN-FIELD FARM USING SEMITRANSSPARENT PHOTOVOLTAIC  
15.00-15.10 A.T. Aschenaki, P. Vig, I. Farkas: PHASE-CHANGE MATERIAL SELECTION AND ASSESSMENT FOR PHOTOVOLTAIC THERMAL SYSTEMS  
15.10-15.20 T. Fares, I. Farkas, I. Seres: ADVANCING SOLAR DESALINATION THROUGH A PORTABLE THERMOSOLAR CYLINDRO-PARABOLIC COLLECTOR  
15.20-15.30 *CLOSING*