Results 2022

7 papers published in ISI jurnals:

1. Terenti, N.; Giurgi, G.-I.; Anghel, C.; Bogdan, A.; Pop, A.; Stroia, I.; Terec, A.; Szolga, L.; Grosu, I.; Roncali, J.

Structure-properties of small donor-acceptor molecules for homojunction single-material organic solar cells

J. Mater. Chem. C, **2022**, *10*, 5716–5726 (impact factor = 8,067)

2. Terenti, N.; Giurgi, G.-I.; Szolga, L.; Stroia, I.; Terec, A.; Grosu, I.; Crişan, A. P.

Effect of the Terminal Acceptor Unit on the Performance of Non-Fullerene Indacenodithiophene Acceptors in Organic Solar Cells

Molecules **2022**, *27*, paper number 1229 (impact factor = 4,927)

3. Szolga, L. A.; Bozga, D. A.; Florea, C.a

"End-User Skin Analysis (Moles) through Image Acquisition and Processing System",

Sensors, **2022**, *22*, paper number 1123, IF 3.847

4. Covaci, M. A.; Szolga, L. A.

"Low-Voltage Plasma Generator Based on Standing Wave Voltage Magnification",

Sustainability, **2022**, *14*, paper number 2890, IF 3.251

5. Covaci, M. A.; Szolga, L. A.

"Black-Box Mathematical Modeling and Heuristic Optimizing of Hampson-Linde Cycle Based on Joule-Thomson Effect and Ohm's Law for Thermal Circuits"

Appl. Sci. **2022**, *12*, paper number 6047. IF = 2.838

6. Giurgi; G.-I. ; Szolga, L. A., Giurgi, D.-V.

"*Benefits of Fuzzy Logic on MPPT and PI Controllers in the Chain of Photovoltaic Control Systems*"

Appl. Sci. **2022**, *12*, paper number 2318, IF 2.838

7. Kovács, R. J. ; Kovács; J.-Z. ; Szolga, L. A.

"Device for Identifying the UV Emission Spectrum"

Sensors **2022**, *22*, paper number 4852, IF 3.847

O cererea de brevet depusa la OSIM

Procedeu pentru obținerea prin depunerea în vid înaintat de celule solare organice stabile de tipul ITO/ZnO/acceptor/donor/MoO_3/al (celule „bilayer" inverse) folosind un donor de tip metildifenilamină și un acceptor fulerenic (C70)

Autori: Giurgi Gavril-Ionel, Szolga Lorant, Bogdan Alexandra, Crisan Andreea Petronela, Grosu, Ion

Numărul de inregistrare OSIM: A/00469 din data de 01.08.2022

Participarea cu 11 lucrari de tip articol la conferinte de specialitate

1. **Szolga, Lorant Andras**; Opra, Razvan Teodor
   "Robotic Arm for Biological Probe Tubes Handling",
   2021 in IEEE 23RD INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME)
   DOI: 10.1109/SIITME53254.2021.9663712
   WOS:000786441900075
   Conferinta indexata ISI
2. **Szolga, Lorant Andras**; Heredea, Paul Catalin; Potarniche, Ioana Adriana
   "Low-Cost Peristaltic Pump for Laboratory Applications",
   2021 in IEEE 23RD INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME),
   DOI: 10.1109/SIITME53254.2021.9663609
   WOS:000786441900076
   Conferinta indexata ISI
3. **Lorant Szolga**
   "On Flight Real Time Image Processing by Drone Equipped with Raspberry Pi4",
   2021 in IEEE 23RD INTERNATIONAL SYMPOSIUM FOR DESIGN AND TECHNOLOGY IN ELECTRONIC PACKAGING (SIITME)
   DOI: 10.1109/SIITME53254.2021.9663650
   WOS:000786441900079
   Conferinta indexata ISI
4. **Lorant Andras Szolga**; Alexandru Nicolae Strugaru
   "Emergency Siren Detection System for Deaf People",
   Nov 2021 in IEEE International Conference on e-Health and Bioengineering (EHB)
   DOI: 10.1109/EHB52898.2021.9657612
   WOS:000802227900073
   Conferinta indexata ISI
5. **Lorant Andras Szolga**; Emese Rebeca Deak
   "Home Healthcare Device",
   Nov 2021 in IEEE International Conference on e-Health and Bioengineering (EHB)
   DOI: 10.1109/EHB52898.2021.9657554
   WOS:000802227900019
   Conferinta indexata ISI
6. Andreea Georgiana Covaciu; Camelia Florea; **Lorant Andras Szolga**
   "Microscopic Images Analysis for Saliva Ferning Prediction",

2020 International Symposium on Fundamentals of Electrical Engineering (ISFEE)
DOI: 10.1109/ISFEE51261.2020.9756142
EID: 2-s2.0-85129527777
Conferinta indexata Scopus

7. G I Giurgi; D Petreus; D V Giugi; **L Szolga**
"Power Conversion Performance of a Single-Phase PV Inverter with Fuzzy Logic Algorithm"
Nov 2021 in IOP Conference Series: Earth and Environmental Science
DOI: 10.1088/1755-1315/897/1/012018
EID: 2-s2.0-85121552755
Conferinta indexata Scopus
8. Mihnea-Antoniu Covaci; **Lorant Andras Szolga**
"*Hampson-Linde Cryogenic Cooler Modeling and Optimization in Matlab/Simulink",*
Sep 2021 in International Conference on Smart and Sustainable Technologies (SpliTech)
DOI: 10.23919/SPLITECH52315.2021.9566388
EID: 2-s2.0-85118447748
Conferinta indexata Scopus
9. **Lorant Andras Szolga**
"Ultrasonic Scanning System for Cartography Applications",
2022 9th International Conference on Electrical and Electronics Engineering (ICEEE)
DOI: 10.1109/ICEEE55327.2022.9772534
EID: 2-s2.0-85130929829
Conferinta indexata Scopus
10. **Lorant Andras Szolga,** Janka Szocs
" RFID tracking system for the basketball game",
International Scientific Conference on Communications, Information, Electronic and Energy Systems, CIEES 2021
AIP Conference Proceedings, 2022, 2570, 030007
DOI:10.1063/5.0099641
EID: 2-s2.0-85137528410Conferinta indexata Scopus
11. **Lorant Andras Szolga,** Sergiu Laza
"Smart car parking system developed on IoT",
International Scientific Conference on Communications, Information, Electronic and Energy Systems, CIEES 2021
AIP Conference Proceedings, 2022, 2570, 030008
DOI: 10.1063/5.0099639
EID: 2-s2.0-8513743463 Conferinta indexata Scopus

Prezentarea succinta a rezultatelor finale

In cadrul proiectului *Alimentatoare inteligente bazate pe utilizarea de surse de energie verde si regenerabila pentru "on-body" senzori si dispositive portabile* s-a reusit obtinerea unui prototip de alimentator (Figurile 1-4) pe baza de celule solare organice depuse pe PET (4 arii de cate 4 celule legate in serie si paralel) si de elementele electronice adecvate care este capabil sa furnizeze curentul electric necesar pentru alimentarea unor senzori corporali sau dispozitive electronice portabile. Testarea lor s-a facut prin aprinderea unor leduri de culoare rosie, verde si albastra si prin incarcarea unui supercapacitor.

Celulele solare organice utilizate, depuse pe materiale flexibile de tip PET, sunt foarte usoare, prietenoase cu mediul, rezistente si obtinerea lor implica costuri mult mai mici decat cele necesare obtinerii de celule solare clasice pe baza de siliciu.

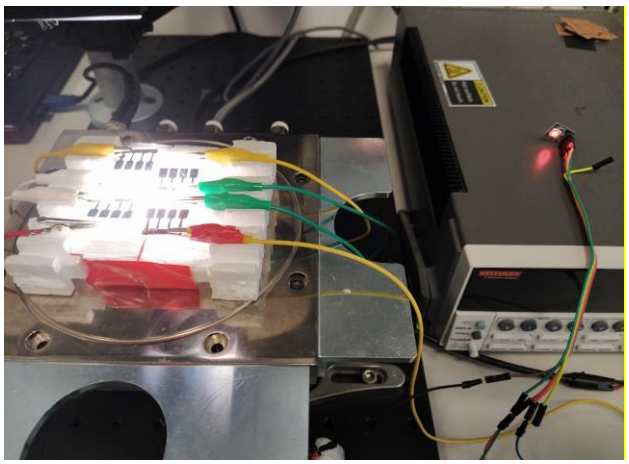

Figura 1. Aprinderea unui LED rosu cu 4 arii de celule legate in serie.

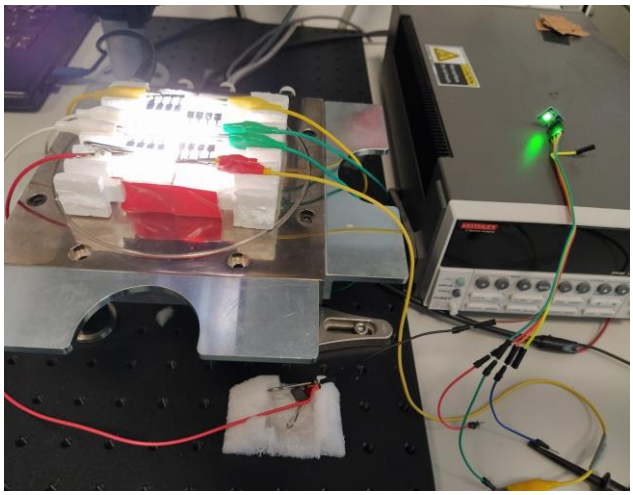

Figura 2. Aprinderea unui LED verde cu 4 arii de celule legate in serie.

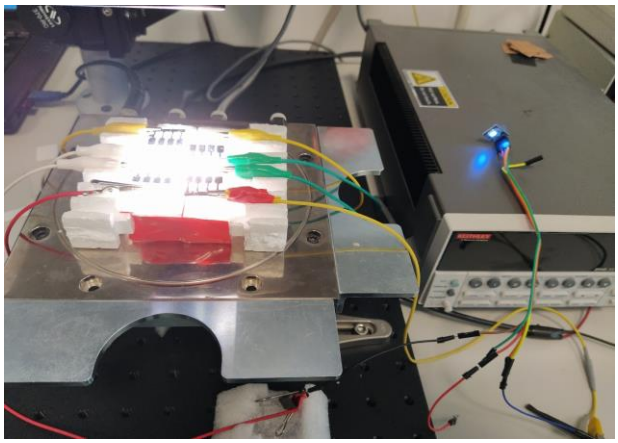

Figura 3. Aprinderea unui LED albastru cu 4 arii de celule legate in serie.

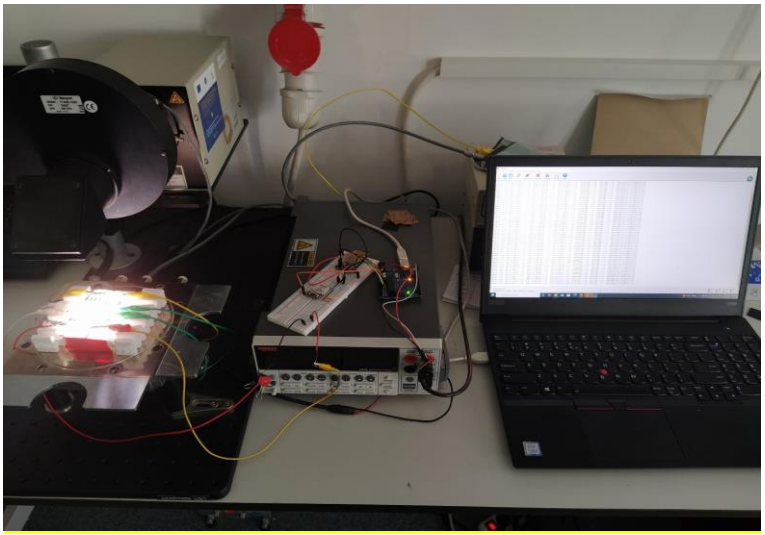

Figura 4. Testarea incarcarii supercapacitorului de la sistemul de 4 lamele de celule solare organice pe PET.