PERSONAL DETAILS

Surname(s) / First name(s): Ursu Daniel Horatiu

Email: danielhoratiu@yahoo.com

Nationality: Romanian

Date of birth: 31.01.1985

Gender: Male

EDUCATION

- 2010 – 2013

PhD ; Degree of Doctor, I Series No. 0004034, under Order MECTS No. 5581 MD of 03.12.2013;

Web:http://catalog.ucv.ro/opac/bibliographic_view/241411;jsessionid=6AB2EFEC0 8C8313E91F7 E56B427E2641; **Specialization**: Material Engineering, *University Politehnica Timisoara*

- 2009 – 2011

Post-graduate course, Degree Series A No. 0137559/5903 of 15.02.2012; Specialization: Quality Management for Technological Processes; *University Politehnica Timisoara*

- 2004 - 2009

Diplomate Engineer, Degree of Engineer, Series H No. 0013367/65557 of 25.11.2009; Specialization: Thermal Systems and Equipment; *University Politehnica Timisoara*

WORK EXPERIENCE

March 2018-present Scientific Researcher III at National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara,

Main activities and responsibilities

1. Elaboration of new materials (nano and microcrystalline, single crystal) by hydrothermal method, solid state and floating zone method.

2. Characterization of materials (XRD, SEM, UV-VIS-NIR, FT-IR, and Electrical analysis);

3. Research projects – proposals, coordination and collaborations.

December 2008 –March 2018, Scientific Research Assistant at National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara,

Main activities and responsibilities: *Elaboration of new materials (nano and microcrystalline, single crystal) by hydrothermal method, solid state and sol-gel method; Characterization of*

materials (XRD, SEM, UV-VIS-NIR, FT-IR, and Electrical analysis); Involved in research projects

GRANTS AND FELLOWSHIPS

- **Project leader: „**Mobile pilot plant for treating waste water with solar energy**”** was appointed as project leader between **01.10.2016-30.09.2017** (**document NJ 1303 / 11.10.2016**) for national applied research project (**PN-II-PT-PCCA-2013-4-1708).** (**http://solwatclean.incemc.ro/**).
- **Responsible for the project in a national project:**
  - ***PN 09-34 02 05/2014*** **„**A(Li,Na)B(Co,Ni)O_2 with layered-structures as cathodes for the batteries**”**
  - ***PN 16 14 01 01/2016*** **„**Development of rechargeable solar batteries based on materials with layered structures obtained by hydrothermal method”
- **Postdoctoral Research Project – „**Efficient materials of the type $AB_{1-x}N_xO_2$ (B = Ga^{3+} or Cr^{3+} and N= Fe^{3+}, Al^{3+} or Mg^{3+}, Al^{3+}) obtained by the hydrothermal method to improve the efficiency of the solar cell based on dye-sensitized**”** ***POSDRU/159/1.5/S/134378***
- **Member:**
  - ***PN-II-RU-TE-2014-4-1142*** „Highly efficient photocathodes for dye-sensitized tandem solar cells based on nanocrystalline delafossite materials’’.
  - **PN-III-P2-2.1-PED-2016-0526** ’’High-efficient and low-cost dye-sensitized solar cells based on copper (HELC DSC)’’ 2017-2018.
  - **PN-III-P1-1.2-PCCDI-2017-0619/ 2018**, **PCCDI „**Materiale carbonice nanostructurate pentru aplicații industriale avansate”. 2017-2020
  - **PN-II-ID-PCE-2012-4-0398 „**New concept for manufacturing the electrode wire based transparent and flexible silver nanowire/polyaniline solar cells”.
  - **RO-FR CTE 8/2013 „**Influence of temperature and high pressure on the structural and physical properties in Fe-based compounds with ordering task**”.**

- ***The list of the most important scientific publications and patterns from 2010-2016 periods***

1. **Daniel Ursu**, Melinda Vajda , Marinela Miclau, *Investigation of the p-type dye-sensitized solar cell based on full Cu2O electrodes*, **Journal of Alloys and Compounds** 802, 86-92, 2019.

2. **Daniel Ursu**, Nicolae Miclau, Marinela Miclau, *n*-Type Conductivity of Cu_2O Thin Film Prepared in Basic Aqueous Solution Under Hydrothermal Conditions, **Electronic Materials Letters**. 14:405–412, (2018)
3. Marinela Miclau, Anamaria Dabici, Melinda Vajda, **Daniel Ursu**, CrOOH as high-performance surface passivation material for dye-sensitized solar cell, **Materials Letters** 216, 1 119-122, (2018).
4. **D. Ursu**, M. Miclău, R. Bănica, N. Vaszilcsin, Impact of Fe doping on performances of $CuGaO_2$ *p*-type dye-sensitized solar cells, **Materials Letters**, 143, 91-93 (2015).
5. **D. Ursu,** N. Vaszilcsin, R. Banica, and M Miclau, Effect of Al doping on performance of $CuGaO_2$ *p*-type dye-sensitized solar cells, **Journal of Materials Engineering and Performance**, 25, 59-63, (2016).
6. **Ursu Daniel**, Bănica Radu, Vaszilcsin Nicolae, Photovoltaic Performance of (Al, Mg)-Doped CuCrO2 for *p*-type Dye-sensitized Solar Cells Application, **Nanoscience and Nanotechnology**, 6(1A): 71-76 (2016).
7. **D. Ursu**, M. Miclau, Thermal stability of nanocrystalline 3R-$CuCrO_2$, **Journal of Nanoparticle Research**, 16(1), 2160, (2014).
8. M. Miclau, **D. Ursu**, S. Kumar, I. Grozescu, Hexagonal polytype of $CuCrO_2$ nanocrystals obtained by hydrothermal method, **Journal of Nanoparticle Research**, 14(9), 1-8, (2012).
9. P. Vlazan, **D.H. Ursu**, C. Irina-Moisescu, I. Miron, P. Sfirloaga, E. Rusu, Structural and electrical properties of TiO_2/ZnO core–shell nanoparticles synthesized by hydrothermal method, **Materials Characterization**, 101, 153–158, (2015).
10. M. Poienar, P. Sfirloaga, C. Martin, **D. Ursu**, and P. Vlazan, Hydrothermal synthesis of crednerite $CuMn_{1-x}M_xO_2$ (M=Mg, Al; x= 0–0.08): structural characterization and magnetic properties, **J Mater Sci** 53: 2389, (2018).

<u>Patterns granted</u>;

1. Marinela Miclau, **Ursu Daniel**, *Procedeu de preparare a filmelor subtiri Cu_2O de tip n, in situ prin metoda hidrotermala* **Patent granted nr. 131270/30.05.2018**

2. Miclau Marinela, Bokinala Kiran Kumar, **Ursu Daniel**, *Procedeu de sinteza a $LiCoO_2$ in conditii hidrotermale*, **Patent granted nr. 127789/30.03.2017**

3. Chirita Marius, **Ursu Daniel**, Banica Radu, Gurgu Radu - *Instalatie de sinteza a materialelor nanocristaline prin metoda hidrotermala cu sursa termica multimodala imersata, multiplu asistata*, **Patent granted nr. 126482/29.11.2016**

<u>Patterns sent to OSIM</u>

1. **Daniel Ursu**, Marinela Miclău, Radu Bănică, Radu Gurgu, *Dispozitiv integrabil pentru testarea celulelor solare pe bază de perovskit în mediu controlabil*, cerere brevet inregistrata **OSIM nr.A00014/14.01.2019.**

2. Marinela Miclau, **Daniel Ursu**, *Celulă solară sensibilizată cu colorant de tip p integrală pe bază de oxid cupros și procedeu de obtinere a acesteia*, **registered patent application OSIM nr.A00454/22.06.2018**

3. **D. Ursu,** R. Bănica, M. Miclău, *Procedeu de sinteză a materialelor compozite pe bază de grafenă redusă/$CuGaO_2$ cu aplicatii fotoelectrochimice*, **registered patent application OSIM nr A00595/22.08.2018**

4. **Daniel Ursu,** Radu Bănică, Terezia Nyari Petru Negrea , Marinela Miclau, Viorel Sasca, Alexandru Hedeș, *Instalatie pilot mobila modular pentru tratarea apelor reziduale cu ajutorul energiei sola*re **registered patent application OSIM nr A00764/28.09.2017.**

5. **Daniel Ursu**, Radu Bănică, Terezia Nyari , Marinela Miclau, Petrică Linul, Mihai-Cosmin Pascariu, Paula Svera, *Instalaţie mobilă de producere fotocatalitică a hidrogenului utilizând energia solară*, **registered patent application OSIM nr A00633/12.09.2017**

6. M. Miclău, M. Vajda, **D. Ursu,** *Celulă solară sensibilizată cu colorant de tip tandem pe bază de structuri delafossitice*, **registered patent application OSIM nr A00721/12.12.2017**

<u>Dissertation coordinator</u>

1. **Stefan Biru**, **<u>DESERTATION PROJECT</u> (UPT Mechanical Engineering)**, *Studii asupra sintezei oxizilor de WO_3 pentru îmbunătăţirea randamantului celulei solare pe bază de colorant sensibilizat*, coordinators: Prof.dr.ing Mircea Nicoară and **Dr.ing. Daniel Horaţiu Ursu** (2019).

2. **Fîţă Marian Cristian**, **<u>DESERTATION PROJECT</u> (UPT, Industrial Chemistry and Environmental Engineering, Timisoara)**, Depunerea electrochimică a platinei, *Dimensionarea tehnologică a unei cuve de electroliză din cadrul unei instalaţii de platinare cu o capacitate de 500 m^2, Studii asupra sintezei oxizilor cu structură delafossit cu aplicaţii în celule solare pe bază de colorant sensibilizat*, coordinators: Conf.dr.ing. Andrea Kellenberger and **Dr.ing. Daniel Horaţiu Ursu** (2017)