



## Europass Curriculum Vitae

### Personal information

First name(s) / Surname(s) **MICLAU MARINELA NICOLETA**  
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Nationality Romanian  
Date of birth 6 December 1972  
Gender Female

ResearcherID C-6837-2012

**Occupational field** **Scientific Researcher II, National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara**

### Work experience

Dates **October 2013-Present**  
Occupation or position held Head of Condensed Matter Department

Dates **2011-2012**  
Occupation or position held Head of Applied Physics Department

Dates **2008-2011**  
Occupation or position held Head of Analysis and Characterization Department

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, XPS, SEM, UV-VIS-NIR, FT-IR, Magnetic and Electrical analysis);
3. Acquisition manage and update of structural characterization devices.
4. Organization of the internal formation courses in the structural characterization of the materials.
5. Research projects – proposals, coordination and collaborations.

Name and address of employer **National Institute for Research and Development in Electrochemistry and Condensed Matter Timisoara**, Condensed Matter Department, 1 Plautius Andronescu, 300224, Timisoara  
Type of business or sector Research-Development

### Education and training

Dates **2007**  
Title of qualification awarded PhD  
Degree of Doctor Series E No. 0007920, under Order MECTS No. 632 of 21.03.2007

Principal subjects/occupational skills covered	Profile: Physics; Specialization: Physics
Name and type of organisation providing education and training	West University Timisoara –Faculty of Physics
Level in national or international classification	PhD studies
Dates	<b>1997 - 1998</b>
Title of qualification awarded	Post-graduate course, Degree Series D No. 0005506/106 of 22.01.2001
Principal subjects/occupational skills covered	Profile: Physics; Specialization: Crystalline Materials Physics
Name and type of organisation providing education and training	West University Timisoara –Faculty of Physics
Level in national or international classification	Master studies
Dates	<b>1991 - 1996</b>
Title of qualification awarded	Physicist, B.S. Degree in Physics, Series P No. 0026999/999 of 27.06.1997
Principal subjects/occupational skills covered	Profile: Physics Specialization: Physics
Name and type of organisation providing education and training	West University Timisoara –Faculty of Physics
Level in national or international classification	Higher education

### Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment

*European level (\*)*

**English**

**French**

	<b>Understanding</b>				<b>Speaking</b>				<b>Writing</b>	
	Listening		Reading		Spoken interaction		Spoken production			
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	

(\*) [Common European Framework of Reference for Languages](#)

**Social skills and competences** Ability to present an issue in front of audience. Spirit of initiative. Adjustment and teamwork skills for the team. Ability to work under stress and endurance. Ability to self motivation. Knowledge transfer capacity and motivation of partners. Analytical thinking and synthesis capability, attention to detail. Good communication and presentation skills. Results oriented and meet deadlines. Adaptability.

**Organisational skills and competences** Contribution in organizing technical Workshops. Work at various national and international projects. Projects management experience in the R&D field. Experience in coordinating a national and FP 7 European research project.

**Technical skills and competences** Ability to work with the synthesis and characterization laboratory equipments in the field of materials science.

Computer skills and competences FullProf, HighScore, Origin, Microsoft Office™ (Word™, Excel™ si PowerPoint™).

Driving licence No

## Additional information

## Annexes

### GRANTS AND FELLOWSHIPS

- ✚ **Fellowships MARIE CURIE**, CRISMAT, ENSICAEN, France (2003-2004).
- ✚ **Scientific Responsible** - "PN II 11-017 PIEZOSENZ (2007-2010).
- ✚ **Collaborator** – "Spin Charge and Orbital Ordering in Transition Metal Oxides (SCOOTMO)" FP5, nr. HPRN-CT-00293- 00293 (2006).
- ✚ **Collaborator**- "New advanced materials." ECO-NET, 10188YD (2004-2006).
- ✚ **Principal investigator** - "New piezoelectric sensors based on  $\alpha$ -quartz type materials, for safety and quality control food industry" – **PNII, C 51-102/2007 (2007 – 2010)**
- ✚ **Person in charge** - "Spin and Orbital Physics: Research for Advanced New Oxides (SOPRANO)"- **FP7- PEOPLE – 2007 – 1 – 1 – ITN-214040 (2008-2012)**
- ✚ **Management Committee Substitute, COST Action IC1401- RO** – "Memristors - Devices, Models, Circuits, Systems and Applications (MemoCiS)" (2014-2018)
- ✚ **Principal investigator** – "Highly efficient photocathodes for dye-sensitized tandem solar cells based on nanocrystalline delafossite materials. "**National Project C 45/2015, PN-II-RU-TE-2014-4-1142 (2015-2017).**
- ✚ **Principal investigator**- "High-efficient and low-cost dye-sensitized solar cells based on copper", **National Project 71PED/2017, PN-III-P2-2.1-PED-2016-0526 (2017-2018).**

### NATIONAL PATENTS

1. **Miclaeu M., Vlazan P., Gurgu R., Grozescu I., Procedeu de sinteza a monocristalelor de tip  $\text{Si}_{1-x}\text{Ge}_x\text{O}_2$  cu structura alpha-cuart in conditii hidrotermale extreme**, National Patent no. 125026/29.01.2016.
2. **Miclaeu M., Bucur R., Grozescu I., Procedeu de sinteza a monocristalelor de tip  $\text{Al}_{1-x}\text{Fe}_x\text{PO}_4$  cu structura  $\alpha$ -cuart in conditii hidrotermale**, National Patent no.127901/30.05.2016.
3. **Miclaeu M., Bokinala K., Ursu D., Procedeu de sinteza a  $\text{LiCoO}_2$  in conditii hidrotermale**, Patent granted nr. 127789/30.03.2017
4. **Marinela Miclaeu, Ursu Daniel, Procedeu de preparare a filmelor subtiri  $\text{Cu}_2\text{O}$  de tip n, in situ prin metoda hidrotermala**, Patent granted nr. 131270/30.05.2018

### LIST OF RELEVANT PUBLICATIONS

1. **M. Miclaeu\*,S. Kumar, D,I Ursu, C. Orha, N. Miclaeu, J.M. Rueff, S. Malo, C. Martin,  $\text{Ag}_2\text{CrO}_4$  for photocatalytic applications: High performance of crystals designed by autogenous pressure**, *Materials Characterization* 158 , 109970, 2019.

2. Daniel Ursu, Melinda Vajda , **M. Miclau\***, **Investigation of the p-type dye-sensitized solar cell based on full Cu<sub>2</sub>O electrodes**, *Journal of Alloys and Compounds* 802, 86-92, 2019.
3. Daniel Ursu, Nicolae Miclau, **M. Miclau\***, **n-Type Conductivity of Cu<sub>2</sub>O Thin Film Prepared in Basic Aqueous Solution Under Hydrothermal Conditions**, *Electronic Materials Letters*. 14:405–412, 2018.
4. **Miclau, Marinela**; Dabici, Anamaria; Vajda, Melinda, Ursu Daniel, **CrOOH as high-performance surface passivation material for dye-sensitized solar cell**, *Materials Letters* , 216, 119-122, 2018.
5. D. Ursu, N. Vaszilcsin, R. Banica, **M Miclau\***, **Effect of Al doping on performance of CuGaO<sub>2</sub> p-type dye-sensitized solar cells**, *Journal of Materials Engineering and Performance*, 25, 59–63, 2016.
6. D. Ursu, **M. Miclau\***, R. Banica, N.Vaszilcsin, **Impact of Fe doping on performances of CuGaO<sub>2</sub> p-type dye-sensitized solar cells**, *Materials Letters*, 143, 2015, 91-93.
7. A.V.Racu , D.H.Ursu , O.V.Kuliukova , C.Logofatu , A.Leca , **M.Miclau\***, **Direct low temperature hydrothermal synthesis of YFeO<sub>3</sub> microcrystals**, *Materials Letters*, 140, 107–110, 2015.
8. **M. Miclau\***, K. Bokinala , N. Miclau, **Low-temperature hydrothermal synthesis of the three-layered sodium cobaltite P3-Na<sub>x</sub>CoO<sub>2</sub> (x =0.60)**, *Materials Research Bulletin*, 54, 1–5, 2014.
9. Ursu, D., **Miclau\***, **M**, **Thermal stability of nanocrystalline 3R-CuCrO<sub>2</sub>**, *J Nanopart Res* 16:2160, 2014.
10. Srinivasa Rao Popuri, Alla Artemenko, Christine Labrugere, **Marinela Miclau**, Antoine Villesuzanne, Michaël Pollet, **VO<sub>2</sub> (A): Reinvestigation of crystal structure, phase transition and crystal growth mechanisms**, *Journal of Solid State Chemistry*, 213, 79-86, 2014.
11. Kumar, S., **Miclau\***, **M.**, Martin, C., **Hydrothermal synthesis of AgCrO<sub>2</sub> delafossite in supercritical water: A new single-step process**, *Chemistry of Materials* 25 (10), 2083-2088, 2013.
12. D H Ursu, **M Miclau**, R Banica and I Grozescu, **Hydrothermal synthesis and optical characterization of Ni-doped CuCrO<sub>2</sub> nanocrystals**, *Phys. Scr.* 014053 doi:10.1088/0031-8949/2013/T157/014053, 2013.
13. Ursu, D.; **Miclau, M.**; Grozescu, I., **In situ variable temperature X-ray diffraction studies on size scale of CuCrO<sub>2</sub> polytypes with delafossite structure**, *Journal of Optoelectronics and Advanced Materials* Volume: 15 Issue: 7-8 , 768-773, 2013.
14. Popuri, S.R., **Miclau, M.**, Artemenko, A., Labrugere, C., Villesuzanne, A., Pollet, M., **Rapid hydrothermal synthesis of VO<sub>2</sub> (B) and its conversion to thermochromic VO<sub>2</sub> (M1)**, *Inorganic Chemistry* 52 (9), 4780-4785, 2013.
15. Bokinala, K., **Miclau\***, **M.**, **A preliminary study on the hydrothermal synthesis of layered cobalt oxides**, *Optoelectronics and Advanced Materials, Rapid Communications* 7 (1-2), 77-79, 2013.
16. Kumar Bokinala, K., Pollet, M., Artemenko, A., **Miclau, M.**, Grozescu, I., **Synthesis of lithium cobalt oxide by single-step soft hydrothermal method**, *Journal of Solid State Chemistry* 198, 45-49, 2013.
17. Kumar, S., Singh, K., **Miclau, M.**, Simon, C., Martin, C., Maignan, A., **From spin induced ferroelectricity to spin and dipolar glass in a triangular lattice: The CuCr<sub>1-x</sub>V<sub>x</sub>O<sub>2</sub> (0≤x≤0.5) delafossite**, *Journal of Solid State Chemistry* 203, 37-43, 2013.
18. **Miclau\***, **M.**, Ursu, D., Kumar, S., Grozescu, I., **Hexagonal polytype of CuCrO<sub>2</sub> nanocrystals obtained by hydrothermal method**, *Journal of Nanoparticle Research* 14 (9), art. no. 1110, 2012.
19. Miron, I., Ursu, D.H., **Miclau, M.**, Grozescu, I., **Sn/SiO<sub>2</sub> single crystals growth by the hydrothermal method at high temperatures and pressures**, *Physica Scripta* (T149), art. no. 014061, 2012.
20. Kumar, S., Marinela, S., **Miclau, M.**, Martin, C., **Fast synthesis of CuCrO<sub>2</sub> delafossite by monomode microwave heating**, *Materials Letters* 70, 40-43, 2012
21. **Miclau\*** **M.**, N. Miclau, **Hydrothermal synthesis of Si<sub>1-x</sub>Sn<sub>x</sub>O<sub>2</sub> single crystal**, *Journal of Optoelectronics and Advanced Materials – Rapid Communications*, vol.4, nr.12,1984-1987, 2010.
22. **Miclau\*** **M.**, N. Miclau, M. Poienar and I. Grozescu, **A new piezoelectric single crystal obtained by Ge doping in the SiO<sub>2</sub> structure**, *Cryst. Res. Technol.* 44, No. 6, 577 – 580, 2009.
23. Martin, C., **Miclau, M.**, Hébert, S., Giot, M., Maignan, A., André, G., Bouree Vigneron, F., **Magnetic study of CaMn<sub>0.96</sub>Mo<sub>0.04</sub>O<sub>3</sub>, canting vs. phase separation**, *Journal of Magnetism and Magnetic Materials* 321 (23) , 3938-3944, 2009.
24. Vasile, M., Avram, N., Vlăzan, P., Grozescu, I., **Miclau, M.**, **Characterization and calculation of energy levels scheme for Er<sup>3+</sup>:ZnGa<sub>2</sub>O<sub>4</sub>**, *Journal of Optoelectronics and Advanced Materials* 10 (11), 2898-2901, 2008.
25. **Miclau\*** **M.** , R. Bucur, P. Vlazan, N. Miclau, **Hydrothermal synthesis of Al<sub>1-x</sub>Ga<sub>x</sub>PO<sub>4</sub> and Ga<sub>1-x</sub>Fe<sub>x</sub>PO<sub>4</sub> α-quartz single crystal**, *Journal of Optoelectronics and Advanced Materials*, vol. 9, no.9, 2792-2794, 2007.
26. **Miclau, M.**, Hejtmanek, J., Retoux, R., Knizek, K., Jirak, Z., Frésard, R., Maignan, A., Martin, C., **Structural and magnetic transitions in CaMn<sub>1-x</sub>W<sub>x</sub>O<sub>3</sub>**, *Chemistry of Materials* 19 (17), 4243-4251, 2007.
27. **Miclau, M.**, Grebille, D., Martin, C., **Crystal growth of CaMn<sub>1-x</sub>Mo<sub>x</sub>O<sub>3</sub> perovskites by the floating-zone technique (0≤x≤0.15)**, *Journal of Crystal Growth* 285 (4), 661-669, 2005.
28. **Miclau, M.**, Hébert, S., Retoux, R., Martin, C., **Influence of A-site cation size on structural and physical properties in Ca<sub>1-x</sub>Sr<sub>x</sub>Mn<sub>0.96</sub>Mo<sub>0.04</sub>O<sub>3</sub>: A comparison of the X = 0.3 and 0.6 compounds**, *Journal of Solid State Chemistry* 178 (4), 1104-1111, 2005.

## **INVITED SPEAKER**

1. **M. Miclău**, "Recent advances in the hydrothermal synthesis of delafossite-type oxides", *4<sup>th</sup> International Solvothermal and Hydrothermal Association Conference - October 26-29, Bordeaux , France, 2014* and **Chairing Session 6B meeting**
2. **M. Miclău**, "Recent advances in the hydrothermal synthesis of Cu-delafossite nanocrystals " *ICACC 2015 - FS5: Single Crystalline Materials for Electrical, Optical and Medical Applications, Daytona Beach, Florida USA, January 25 to 30, 2015.*

## **INTERNATIONAL CONFERENCES – oral presentation**

1. **M. Miclău**, R. Baies, P. Vlăzian, R.A. Bucur, I. Grozescu, X-Ray Diffraction study of  $\alpha$ -Quartz type  $A_xB_{1-x}PO_4$  (A=Al, Fe B=Ga) obtained by hydrothermal conditions 3rd International Conference on Materials and Condensed Matter Physics, Chisinau, 6 octombrie 2006;
2. **M. Miclău**, R. Bucur, P. Vlăzian, I. Grozescu, The  $Si_{1-x}Ge_xO_2$  single crystal with alpha-quartz structure obtained by hydrothermal method using high temperatures and pressures, International Conference on Condensed Matter Physics FMC08, Timisoara, iulie 2008.
3. **M. Miclău**, Nouveaux cristaux d'alpha-quartz obtenus par croissance hydrothermale, Cristech 2008, 6 - 8 octobre 2008, France.
4. Sanjay Kumar, S. Marinel, C. Martin, **M. Miclău**, Fast synthesis of  $CuCrO_2$  delafossite by monomode microwave heating, CMP - O04, Physics Conference TIM-11, 24th November 2011- 27th November 2011, Timisoara, Romania.
5. Srinivasa Rao Popuri, Antoine Villesuzanne, Michaël Pollet, **Marinela Miclău**, Exploration of phase transformations of vanadium dioxide nanopolymorphs using simple hydrothermal synthesis, CMP - O05, Physics Conference TIM-11, 24<sup>th</sup> November 2011- 27<sup>th</sup> November 2011, Timisoara, Romania.
6. S. L. Pyshkin, A. V. Racu, **M. Miclău**, Hydrothermal synthesis of yttrium based  $ABO_2$ ,  $ABO_3$  - ternary oxides, 6th International Conference on Materials Science and Condensed Matter Physics (MSCMP 2012).

## **Patterns sent to OSIM**

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 Miclău**, 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. Bănică, **M. Miclău**, *Procedeu de sinteză a materialelor compozite pe bază de grafenă redusă/CuGaO<sub>2</sub> 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 Hedeş, *Instalație pilot mobilă modular pentru tratarea apelor reziduale cu ajutorul energiei solare* **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, *Instalație 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 delafosfitice*, **registered patent application OSIM nr A00721/12.12.2017**