PERSONAL INFORMATION   Alexandra Popescu

West University of Timisoara

+40-(0)256 592 361

alexandra.popescu@e-uvt.ro

http://quasar.physics.uvt.ro/~apopescu/

WORK EXPERIENCE

2014 - present   Lecturer

Faculty of Physics, West University of Timisoara

- Teaching activities: Computational Physics, Thermodynamics and statistical physics, Transport Phenomena
- Research activities in the field of numerical modeling

Business or sector Academic

2008-2013   Associate Lecturer

Faculty of Physics, West University of Timisoara

- Teaching activities: Computational Physics, Thermodynamics and statistical physics,
- Research activities in the field of numerical modeling

Business or sector Academic

2006-2008   Associate Teaching Assistant

Faculty of Physics, West University of Timisoara

- Teaching activities: Algorithms and programming, Computational Physics
- Research activities in the field of numerical modeling

Business or sector Academic

EDUCATION AND TRAINING

2009-2012   Doctor in Physics

Faculty of Physics, West University of Timisoara

- Ph.D. thesis title: Study of the directional solidification process of multicrystalline silicon by numerical methods

Scientific coordinator: Prof. Dr. Daniel Vizman

2006-2008   Diploma of Master of Science in Theoretical Physics

Faculty of Physics, West University of Timisoara

- Dissertation thesis title: Simulation studies for the beam calorimeter of the ILC detector

Scientific coordinator: Conf. Dr. Aura Roşca

- Principal subjects covered: Quantum Fields, Elementary Processes, Computational Physics

2002-2006   Bachelor degree in Physics-Informatics

Faculty of Physics, West University of Timisoara

- Thesis title: Numerical relativity: fundaments of the general relativity canonical formalism

Scientific coordinator: Prof. Dr. Dumitru Vulcanov

PERSONAL SKILLS

Mother tongue Romanian

Other languages

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C1	C1	C2

English: see row above.

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
Common European Framework of Reference for Languages

Technical skills and competences

Technical competence and experimental abilities in the following areas:
- Crystal growth
- Computational physics

Computer skills and competences

- Programming languages: C, C++, PETSc
- Software for simulating physical phenomena: CrysVUn, STHAMAS3D
- Text processing software: Microsoft Office package, Latex
- Data processing software: Pararview, Grace, GnuPlot, Origin, Maple
- Operating systems: Linux, Windows

ADDITIONAL INFORMATION

Research projects

2023 - 2026

Enhanced Single Crystal Applications and Research in the Growth of new Optical rare earth-based compounds for sustainable and efficient Technologies - **ESCARGOT** (in the frame of „Dezvoltarea unui program pentru atragerea resurselor umane înalt specializate din străinătate în activități de cercetare, dezvoltare și inovare" PNRR-III-C9-2022 – I8)
- **Position: Researcher**

2018 - 2020

Numerical modeling of transport phenomena in a Czochralski growth of Silicon crystals for photovoltaic applications – **SILTIM**, (in the frame of „Proiecte de cercetare pentru stimularea tinerelor echipe independente", project number PN-III-P1-1.1-TE-2016-0416)
- website: http://quasar.physics.uvt.ro/~apopescu/SILTIM
- **Position: Project director**

2016 - 2019

Physical and numerical experiments for studying the laser accelerated particles and their interaction with crystalline materials, **ELICRYS-2** (in the frame of PNCDI III, Programul 5, Subprogramul 5.1 ELI-RO); Project director: Prof. Dr. Daniel Vizman
- **Position: Researcher**

2014-2016

High energy radiations effects on some fluorite and semiconducting crystals, **ELICRYS** (in the frame of CAPACITĂŢI, Modul III, RO-ELI-CERN); Project director: Prof. Dr. Daniel Vizman
- **Position: Researcher**

03/2014 – 12/2014

High Performance Computing Service Centre – **HOST** (project number FP7-REGPOT-CT-2011-284595-HOST); Project director: Prof. Dr. Dana Petcu
- **Position: Postdoctoral researcher**

2010 - 2013	Study of the influence of forced and natural convection on impurity segregation and coating stability in the ingot growth of multicrystalline Silicon for photovoltaic applications, **CONSIL** (in the frame of CAPACITĂŢI, Modul III, Parteneriat IFA-CEA France din PN II); Project director: Prof. Dr. Daniel Vizman

- **Position: Research assistant**

07/2013 – 12/2013	The influence of melt rotation on the impurities distribution in a directional solidification process of multicrystalline (in the frame of Internal grants of the Faculty of Physics, West University of Timisoara, project number UVT-FIZ-POSTDOC-2013)

- **Position: Postdoctoral researcher**

Other information

- Hirsch factor: 7; Citations (without self-citations): 95
- Editor of the TIM13, TIM14, TIM15-16, TIM17, TIM19, TIM20-21 Physics Conference AIP Proceedings
- 1st of June 2012: Invited talk at the Leibniz Institute for Crystal Growth (IKZ), Berlin, Germany
    - *Some numerical investigation on the directional solidification process of multicrystalline silicon*
- Cover page in Crystal Growth & Design 12 (2012) (impact factor: 4.72)
- **Link:** https://pubs.acs.org/toc/cgdefu/12/1

Alexandra Popescu, Daniel Vizman - *Numerical study of the influence of melt convection on the crucible dissolution rate in a silicon directional solidification process.*

- Article "*Micro structures in the grain evolution during solidification of silicon: Phase field calculations*", by Wolfram Miller and Alexandra Popescu was published in *Acta Materialia* ranked first, according to Web of Science, for the Metallurgy & Metallurgical Engineering domain

ANNEXES

Researcher profiles

- Clarivate Web of Science researcher profile
- Scopus researcher profile
- Google Scholar researcher profile
- ORCiD researcher profile

ISI Articles

1. **Alexandra Popescu**, Daniel Vizman - *Particularities of the thermal and oxygen concentration instabilities in a Czochralski process for solar silicon growth*,
   Journal of Crystal Growth 611 (2023), 127177
   Scientometrics (2022): IF: 1.8; AIS: 0.286
   Link: https://doi.org/10.1016/j.jcrysgro.2023.127177

2. **Alexandra Popescu**, Martin P. Bellmann, Daniel Vizman - *Effect of crucible rotation on the temperature and oxygen distributions in Czochralski grown silicon for photovoltaic applications*,
   CrystEngComm 23 (2021), 308-316
   Scientometrics (2021): IF: 3.756; AIS: 0.502 (2021)
   Link: https://doi.org/10.1039/D0CE01377C

3. Wolfram Miller, **Alexandra Popescu** – *Micro structures in the grain evolution during solidification of silicon: Phase field calculations*
   Acta Materialia 140 (2017), 1-9
   Scientometrics (2017): IF: 6.036; AIS: 1.673 (2017)
   Link: https://doi.org/10.1016/j.actamat.2017.08.025

4. **Alexandra Popescu**, Daniel Vizman – *Numerical study of the influence of forced melt convection on the impurities transport in a silicon directional solidification process*
   Journal of Crystal Growth 474 (2017), 55-60
   Scientometrics (2017): IF: 1.742; AIS: 0.358
   Link: https://doi.org/10.1016/j.jcrysgro.2016.11.122

5. **Alexandra Popescu**, Stelian Arjoca, Daniel Vizman – *Numerical study of electromagnetic stirring in a cylindrical configuration for directional solidification of multi-crystalline silicon*,
   Romanian Journal of Physics 62 (2017), 608
   Scientometrics (2017): IF: 1.433; AIS: 0.259
   Link: https://rjp.nipne.ro/2017_62_9-10/RomJPhys.62.608.pdf

6. Radu Andrei Negrila, **Alexandra Popescu**, Daniel Vizman - *Numerical and experimental modeling of melt flow in a directional solidification configuration under the combined influence of electrical current and magnetic field*
   European Journal of Mechanics - B/Fluids 52 (2015), 147-159
   Scientometrics (2015): IF: 1.418; AIS: 0.685
   Link: https://doi.org/10.1016/j.euromechflu.2015.03.001

7. Wolfram Miller, **Alexandra Popescu**, Giordano Cantù - *Solidification of multicrystalline silicon - simulation of micro-structures*,
   Journal of Crystal Growth 385 (2014), 127-133
   Scientometrics (2014): IF: 1.698; AIS:0.401
   Link: https://doi.org/10.1016/j.jcrysgro.2013.01.044

8. Giordano Cantù, **<u>Alexandra Popescu</u>**, Wolfram Miller - *Grain growth of silicon*
    Acta Materialia 60 (2012), 6755–6761
    Scientometrics (2012): IF: 3.941; AIS:1.711
    Link: https://doi.org/10.1016/j.actamat.2012.08.048

9. Sebastian Dumitrica, Daniel Vizman, Jean - Paul Garandet, **<u>Alexandra Popescu</u>** - *Numerical studies on a type of mechanical stirring in directional solidification method of multicrystalline silicon for photovoltaic applications*
    Journal of Crystal Growth 360 (2012), 76–80
    Scientometrics (2012): IF: 1.552; AIS:0.454
    Link: https://doi.org/10.1016/j.jcrysgro.2012.01.011

10. **<u>Alexandra Popescu</u>**, Daniel Vizman - *Numerical study of melt convection and interface shape in a pilot furnace for unidirectional solidification of multicrystalline silicon,*
    Crystal Growth & Design 12 (2012), 320-325
    Scientometrics (2012): IF: 4.689; AIS:0.949
    Link: https://doi.org/10.1021/cg201123x

11. **<u>Alexandra Popescu</u>**, Daniel Vizman - *Numerical study of the influence of melt convection on the crucible dissolution rate in a silicon directional solidification* process,
    International Journal of Heat and Mass Transfer 54 (2011), 5540-5544
    Scientometrics (2011): IF: 2.407; AIS:0.825
    Link: https://doi.org/10.1016/j.ijheatmasstransfer.2011.07.037

ISI Conference Proceedings

1. Andreea Cojocaru, Oana Mares, Dragos Tatomirescu, **<u>Alexandra Popescu</u>** - *The influence of Marangoni convection and of the external temperature gradient on the temperature fluctuations in a Czochralski solar silicon process*
    AIP Conference Proceedings 2218, (2020), 040006
    Link: https://doi.org/10.1063/5.0001053

2. Dragos Tatomiescu, **<u>Alexandra Popescu</u>**, Emmanuel d'Humieres, Daniel Vizman - *Numerical Simulation of Laser Ion Acceleration at Ultra High Intensity*
    AIP Conference Proceedings 1796 (2017), UNSP 020013
    Link: https://doi.org/10.1063/1.4972361

3. Radu Andrei Negrila, **<u>Alexandra Popescu</u>**, Daniel Vizman - *GaInSn Melt Flow Structure Variation with Crucible Size in an Isothermal Electromagnetic Stirring Configuration*
    AIP Conference Proceedings 1694 (2015), UNSP 030003
    Link: https://doi.org/10.1063/1.4937247

4. Vasile Pupazan, **<u>Alexandra Popescu</u>**, Octavian Madalin Bunoiu, Daniel Vizman - *GaInSn Melt Flow Structure Variation with Crucible Size in an Isothermal Electromagnetic Stirring Configuration*
    AIP Conference Proceedings 1472 (2012), 210-214
    Link: https://doi.org/10.1063/1.4748090

5. Octavian Bunoiu, Marius Stef, **<u>Alexandra Popescu</u>**, Daniel Vizman - *Interface Shape Studies in Bridgman Growth of Multicrystalline Silicon*
    AIP Conference Proceedings 1387 (2011), 226-231
    Link: https://doi.org/10.1063/1.3647079

Articles indexed in International Databases

1. Daniel Ursu, Radu Negrila, **<u>Alexandra Popescu</u>**, Ioan Grozescu, Daniel Vizman - *Numerical and Experimental Studies of Fluid Flow and Heat Transfer in a Model Experiment for Hydrothermal Growth*
Solid State Phenomena 254 (2016), 237-242

2. **<u>Alexandra Popescu</u>**, Daniel Vizman - *Influence of Mechanical Stirring on the Crucible Dissolution Rate and Impurities Distribution in Directional Solidification of Multicrystalline Silicon*
Annals of West University of Timisoara - Physics 58 (2015), 1224-9718

3. Radu Negrila, **<u>Alexandra Popescu</u>**, Marius Paulescu, Daniel Vizman - *Control of convective flows in a rectangular crucible by a special type of electromagnetical stirring*
Proceedings of the 9th PAMIR International Conference (2014), 204-208