

## PERSONAL INFORMATION

## Emil Bruj



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## WORK EXPERIENCE

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- 7 May 2016–Present** **Technological Development Engineer II**  
INCDTIM, Cluj-Napoca (Romania)  
Responsible for mechanical design development of the research projects, as well as, alternative energy research projects.
- 1 Dec 2014–6 May 2016** **Mechanical Design Engineer (R&D Department)**  
Hanna Instruments (S.C. Hanna Baci S.R.L.), Cluj-Napoca (Romania)  
As a Mechanical Design Engineer in the R&D Department I was developing and designing new devices by working closely with other Departments such as Electronics, Chemistry and Software. Using SolidWorks and PTC Creo software, I carried out drop test simulations to help the designing, test all kind of materials from battery contacts to LCD's, switches and plastics.
- 7 Dec 2011–1 Dec 2014** **Material Science Research Engineer (Moulding Unit)**  
Hanna Instruments (S.C. Moulding Unit S.R.L.), Nusfalau (Salaj) (Romania)  
In the Molding Department I have improved my technical calculations skills used in repairing and modifying molds. I was also designing molds for new parts that were developed for new generation devices and by using Autodesk Moldflow I have made injection simulations for a couple of parts. In the last year I was responsible for training new employees, assign and verify works regarding repair, modification and maintenance of moulds. I was also collaborating with the R&D Department and Injection Department for modifications, maintenance, repair and design of moulds for new parts.
- 1 Oct 2008–1 Oct 2011** **PhD Student/Research Assistant**  
Technical University of Cluj-Napoca, Cluj-Napoca (Romania)  
In charge with research and documentation in Materials Science for certain projects.
- 1 Oct 2006–1 Oct 2008** **Executive Manager**  
S.C. Rombruj S.R. L., Cluj-Napoca (Romania)  
Main activities and responsibilities were employee coordination and financial resources administration.
- 1 Oct 2005–1 Oct 2006** **Electro-energetician**  
S.C. Energy Group S.R.L., Cluj-Napoca (Romania)  
I was in charge with electrical installation of low and medium voltage and execution of automated power distribution.
- 1 Oct 2004–1 Oct 2005** **CNC Production Engineer**  
S.C. GPM S.R.L., Cluj-Napoca (Romania)  
By working with SolidWorks and SolidEdge I was in charge of creating 3D parts from 2D drawings,

and then make and check the cutting program for the CNC machines.

1 Oct 2003–1 Oct 2004

**Mechanical engineer and Supply Manager**

S.C. Dimeco S.A., Cluj-Napoca (Romania)

Responsible with the design of components with AutoCAD and programming of plasma cutting machine using Robotronics software. I was also responsible with materials acquisitions for production.

EDUCATION AND TRAINING

1 Oct 2008–1 Oct 2011

**Ph.D. in Materials Science**

Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

PhD degree with title: “**Studies and research on the obtaining and characterization of metal foams by powder sintering**”.

1 Oct 2003–31 Jul 2004

**Advanced Studies Diploma in Special Methods in MEMM**

Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

1 Oct 1998–31 Jul 2003

**BoS in Management and Engineering of Machine Manufacturing (MEMM)**

Technical University of Cluj-Napoca, Cluj-Napoca (Romania)

PERSONAL SKILLS

Mother tongue(s) Romanian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C1	B2	B2	B2
French	B1	B2	A2	A2	B1
Italian	B1	B1	A2	A2	A1
German	A2	A2	A1	A1	A1

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

Communication skills Good communication skills gained trough my experience as team leader and manager

Organisational / managerial skills Good organizer, spirit of initiative, team player.

Job-related skills A good knowledge of plasma cutting equipment, CNC lathes and milling machines, EDM machines, various laboratory equipment and sintering furnaces, electronic microscopy (SEM, TEM), mechanical testing machines, metallography, 3D Design Software and Simulation Software, etc.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Independent user	Independent user	Proficient user	Proficient user

## Digital skills - Self-assessment grid

Microsoft Office: Word, Excel, PowerPoint; CorelDraw; CAD/CAM: AutoCad, SolidWorks, Catia V5, Creo/ProEngineer, Promotion Nest, Ansys, etc.

Driving licence B

## ADDITIONAL INFORMATION

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### Publications

- I. Vida-Simiti, N. Jumate, **E. Bruj**, G. Thalmaier, O. Nasca - „**Sintered foams from Ni-based superalloy metallic powders**”, Optoelectronics and Advanced Materials - Rapid Communications, Vol. 4, No. 8, August 2010, ISSN 1842-6573, pp. 1174-1177.
- **E. Bruj**, N. Jumate, I. Vida-Simiti, V. Moldovan, D. Nemeş – „**Study on the physical and mechanical properties of Ni-Based sintered metallic foams**”, Journal of Optoelectronics and Advanced Materials, Vol. 13, No. 7, July 2011, ISSN: 1454-4164, pp. 866-869.
- Vida-Simiti, Ioan; Jumate, Nicolaie; **Bruj, Emil**; et al. – “**Metallic Foams Obtained from Nickel Based Superalloy Hollow Spheres**”, 4th International Conference on Powder Metallurgy, RoPM 2009 Location: Tech Univ Cluj-Napoca, Craiova, ROMANIA Date: JUL 08-11, 2009.

### Patent applications request

- „**Complex assembly for solar energy conversion into thermal and electrical energy**”, Emil Bruj, Adrian Bot, Vasile Rednic, Sergiu Pogăcian, Bogdan Belean, Ioan Misan, Teodora Murariu, Gabriel Rosca, A/01092, 2017.
- „**Pneumatic wave energy recuperator of vehicles in motion on highways**”, Adrian Bot, Emil Bruj, Vasile Rednic, Sergiu Pogăcian, Dan Zotoiu, A/00151, 2017.
- „**Multi-focal solar concentrator with Stirling engine**”, Adrian Bot, Vasile Rednic, Emil Bruj, Gheorghe-Sergiu Pogăcian, tefan Gergely, Ionel-Radu Pop, Robert Gutt, A/00849, 2018.

### Awards

- 3rd place at 5th edition of Student scientific communication session in the “Advanced technologies in mechanical engineering”, with „**A novel method for obtaining leachable preforms**”, **Emil Bruj**, Valentin Moldovan, Dorel Nemeş, 2009.
- 1st place at 6th edition of “Acta Mechanica” Scientific Communication Session, with „**Preliminary Studies and Researches for Obtaining Metallic Foams from Hollow Powders**”, **Emil Bruj**, 2010.
- Best Poster Award at the International Conference Processes in Isotopes and Molecules - PIM 2017.
- Excellence Diploma at XVI edition of PRO INVENT for „**Pneumatic wave energy recuperator of vehicles in motion on highways**”, Adrian Bot, **Emil Bruj**, Vasile Rednic, Gheorghe-Sergiu Pogăcian, Dan-Ioan-Alin Zotoiu 2018.
- Excellence Diploma and Silver Medal at XVI edition of PRO INVENT for “**Complex assembly for solar energy conversion in thermal and electric energy**”, 2018.
- Best Presentation Award - ICREWE 2018 pentru lucrarea: „**Solution to increase the produced power in micro-hydro power plant**”, Radu Pop, Adrian Bot, Vasile Rednic, Emil Bruj, Oana Raita, Liviu Vaida, 2018.