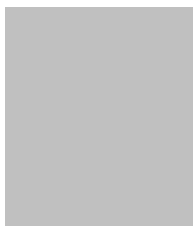



PERSONAL  
INFORMATION


Dan Enache

 **Soseaua Oltenitei 13 C Bis, County Ilfov, Popesti-Leordeni, Romania**
 +40 784 35 25 13

 **dan.enache@icpe-ca.ro**

Sex Male

Date of birth 07/05/1984

Nationality Romanian

 WORK  
EXPERIENCE

- November 2014 – 2021    Electrical Engineer / Scientific Research Assistant  
**National Institute for Research and Development in Electrical Engineering ICPE-CA  
 INC DIE ICPE-CA ; Blv. Splaiul Unirii nr. 313, J Building, District 3,  
 Bucharest**
- October 2021 - Present    Electrical Engineer / Scientific Researcher III/ Deputy Head of Department of Non-  
 Conventional Electrical Engineering
- National Institute for Research and Development in Electrical Engineering  
 ICPE-CA  
 INC DIE ICPE-CA ; Blv. Splaiul Unirii nr. 313, J Building, District 3,  
 Bucharest**
- Main activities and responsibilities:**
- Numerical modeling ( Comsol Multiphysics, Matlab, etc )
  - Specific scientific research activities undertaken in Department of Conversion Efficiency and Energy Consumption - Applied Superconductivity Laboratory
  - Active participation and execution supervision of prototypes and experimental assemblies.
  - Main research projects:
    1. Ctr. no. 08626319 / 14201055-77 (2015) “ The execution of superconducting coils from booster corrector magnets of NICA accelerator“ ;  
Beneficiary : IUCN Dubna - Russia
    2. Grant poz.1 from IUCN Order no. 32/23.01.2015 (2015) “ The device realization for superconducting coils execution coils from booster corrector magnets of NICA accelerator ” ;  
Beneficiary : IUCN Dubna – Russia
    3. Ctr. no.55/2014 (2014-2016) “ Dipolar superconducting electromagnet for high and uniform magnetic field generation “ ( PN II )
    4. Ctr. no.E10/2014 (2014-2016) “ HTS superconducting magnet designed for magnetic nuclear moments measurements “
    5. Ctr. no.F10/2014 (2014-2016) “ Laboratoy for testing and development acceleration structures, transport and diagnosis of charged particle beams”
    6. Ctr. no 41/2014 “Design of the superconducting magnet ( cooled by a closed cycle cryocooler ) from the IBR-2M reactor “
    7. ELI 27 “ Development of new experimental setups and materials for the positron convertor and moderator for the ELI-NP positron beam line (COMPOSITE)”
    8. National project Nucleu, „Sensors and electronic actuators based on new active materials”
    9. 323/2018, “New complex superconducting magnet generating 6T for neutrons spectroscopy aims”, 04-4-1122-2015/2020

10. 397/2019, “Development of spin research infrastructure at Nuclotron-M Facility”, 02-1-1097-2010/2021
11. 220/2017, “Detectors development of the spin studies at Nuclotron/NICA”, 02-1-1097-2010/2018
12. 365/2021, “Study of thermal instabilities and magnetic effects on the HTSC magnet functional parameters”, 04-4-1143-2021/2025
13. 96/2016, 02-0-1065-2007/2019, “Development of superconducting magnets for accelerators/NICA”
14. 220/2017, “Measurement of the physical properties and criogenic tests of the superconducting coils for corrector magnets of NICA booster”, 02-0-1065-2007/2019
15. ELI-RO-05/2020(POSBOT) cu numar intern 7147/2020 cu durata pina in 2022 si valoare 336415 lei ,cu obiectivul “Capcana magnetica pentru pozitroni”
16. Nucleu 5303/2019 “Generatori de cimpuri magnetice intense cu geometrii diverse si interactiunea lor cu fascicule de particule incarcate electric cu aplicatii in industrie, fizica nucleara si medicina.”

**Business or sector** Scientific research / Electrical Engineering

## EDUCATION AND TRAINING

(2014-2021)

### PhD

**University Politehnica of Bucharest, ( UPB )**

**Faculty of Electrical Engineering ( FIE)**

**Learning outcomes of the programme of study:**

- Knowledge and understanding of principles, concepts and theories of superconductivity
- Design of elements specific of superconductivity : superconducting coils, superconducting magnets, cryogenic cooling systems, etc.
- Numerical modeling specific to superconductivity

2012 – 2014

### Master Engineer (M.Eng.)

**University Politehnica of Bucharest, ( UPB )**

**Faculty of Electrical Engineering ( FIE)**

**Power electronics and intelligent electrical drive ( EPA )**

**Learning outcomes of the programme of study:**

- Special electrical issues
- Modeling electromechanical converters , static converters modeling and control, virtual systems analysis parameters static converters
- Knowledge and understanding of research techniques ( documentary , experimental design / numerical simulations , conduct the experiment / numerical simulation and experimental obtaining information , the processing thereof )
- The thermal stability of electrical and electronic systems
- control , monitoring and diagnosis of electrical drives
- Specific Legislation and rules in Electrical Engineering

2008 – 2012

### Engineer (Eng.)

**University Politehnica of Bucharest, ( UPB )**

**Faculty of Electrical Engineering ( FIE)**

### Power electronics and electrical drive ( EA )

#### Learning outcomes of the programme of study:

- Analyze , calculation and design of power electronics and electric drive
- Knowledge and use of specific software ( Matlab , Simulink , PSIM )
- Knowledge and application of measurement techniques , testing , diagnosis and electromagnetic compatibility specific to the field .

### PERSONAL SKILLS

Mother tongue(s)

Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B1	B1
French	A1	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2: Proficient user  
 Common European Framework of References for Languages

Communication skills

- **Team work** : Within my last jobs I have worked in various teams, under guidance of several senior engineers or scientific researchers , and a good communication skills was mandatory for the smooth running of projects.

Digital competence

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

Levels: Basic user - Independent user - Proficient user  
[Digital competences - Self-assessment grid](#)

Computer skills

- Good knowledge of numerical modeling program : Comsol Multiphysics
- Basic knowledge of Matlab / Simulink
- basic knowledge of the program of detailed 2D / 3D : Solidworks
- Good knowledge of Microsoft Office programs ( Word , Excel , Powerpoint , etc. )
- Good knowledge of program conducted mathematical calculations : MathCAD

ADDITIONAL INFORMATION	

<p>Most relevant scientific papers</p>	<ol style="list-style-type: none"> <li>1. Superconductive Dipolar Electromagnets for Particle Accelerators. Two Constructive Models”, SIELMEN 2015- Proceedings of the 10th international conference on electromechanical and power systems (ISBN: 978-606-567-284-0) , Chisinau, Republic of Moldova. Authors: <b>Enache Dan</b>, Dobrin Ion, Morega Alexandru, Apostol Emilia</li> <li>2. „HTS Dipole Magnet, Conduction Cooled for Particle Accelerators”, The 5th International Conference of Superconductivity and Magnetism, (ICSM 2016), Fethiye, Turcia. Authors: Dobrin Ion, Morega Alexandru, <b>Enache Dan</b>, Morega Mihaela, Andrei Dobrin</li> <li>3. „Experiments on YBCO tape type High Temperature Superconductor Junctions”, The International Conference on Applied and Theoretical Electricity (ICATE 2016), Craiova, Romania. Authors: <b>Enache Dan</b>, Dobrin Ion, Morega Alexandru, Morega Mihaela, Dobrin Andrei</li> <li>4. „High Temperature Superconductor dipolar magnet for high magnetic field generation - design and fabrication elements”, The 10th International Symposium on ADVANCED TOPICS IN ELECTRICAL ENGINEERING - ATEE 2017, Bucharest, Romania. Authors: Dobrin Ion, Morega Alexandru, <b>Enache Dan</b>, Dobrin Andrei, Morega Mihaela, Dobre Alin, Popovici Iuliu Romeo</li> <li>5. „Conduction Cooled HTS Dipolar Magnet, Realization and Experimental Results”, European Conference on Applied Superconductivity EUCAS 2017, Geneva, Switzerland. Authors: Dobrin Ion, Morega Alexandru, <b>Enache Dan</b>, Morega Mihaela, Dobrin Andrei, Popovici Iuliu Romeo, Dobre Alin</li> <li>6. “Simulations Of Cryogenic Systems For The Slow Positron Production At Eli – Np”, Scientific Bulletin UPB. Authors: Ion Dobrin , Nikolay Djourelou , <b>Dan Enache</b> ,Alexandru Morega , Andrei Dobrin , Iuliu Popovici</li> <li>7. “Conceptual model of a Hall sensor based system for magnetic field mapping”, SIELMEN 2015- Proceedings of the 10th international conference on electromechanical and power systems (ISBN: 978-606-567-284-0) , Chisinau, Republic of Moldova. Autori: Dobrin, Ion; Sava, Tiberiu Bogdan; Savu, Bogdan; <b>Enache, Dan</b>; Popa, Marius</li> <li>8. “Copper – YBCO Tape Low Resistivity Junctions”, The XX International Scientific Conference of Young Scientists and Specialists (AYSS-2016), Dubna, Rusia. Authors: <b>Dan Enache</b>, Ion Dobrin, Alexander Chernikov</li> <li>9. “Numerical modeling and analysis of the magnetic field generated by the solenoid for the spin program at NICA”, Relativistic Nuclear Physics and Quantum Chromodynamics, XXIII International Baldin Seminar on High Energy Physics Problems, JINR-Dubna, Rusia, 2016. Authors: Dobrin I., Kovalenko A.D., Ladygin V., <b>Enache D.</b>, Dobrin A., Popovici I.</li> <li>10. “Development of sample environment system for DN-12 diffractometer on the IBR-2M pulsed reactor (pressure – temperature – magnetic field)”, International Collaboration on Advanced Neutron Sources (ICANS XXII), Oxford, England, 2017. Authors: Ion Dobrin, Alexndr Chernikov, Nikita Kovalenko, Sergey Kulikov, Otilia Culicov, <b>Dan Enache</b>, Andrei Andrei, Iuliu Popovici</li> <li>11. “First results on the energy scan of the vector <math>A_y</math> and tensor <math>A_{yy}</math> and <math>A_{xx}</math> analyzing powers in deuteron-proton elastic scattering at Nuclotron”, Journal of Physics: Conference Series, Volume 938, conference 1. Authors: V P Ladygin, A V Averyanov, E V Chernykh, <b>D Enache</b>, Yu V Gurchin, A Yu Isupov, M Janek, J-T Karachuk, A N Khrenov, D O Krivenkov, P K Kurilkin, N B Ladygina, A N Livanov, S M Piyadin, S G Reznikov, Ya T Skhomenko, A A Terekhin, A V Tishevsky, T Uesaka</li> <li>12. “Design And Modeling Of A Persistent Switch For Hts Superconducting Coils Destinated To Work In A Magnetic Energy Storage System”, 18th International Balkan Workshop on Applied Physics and Materials Science, Constanta, Romania, 2018. Authors: Ion Dobrin, <b>Dan Enache</b>, George Dumitru, Andrei Dobrin, Iuliu Popovici</li> <li>13. “Design Of A Cryogenic Device For Solid Neon Deposition On A Positrons Source For Eli-Np Project”, 18th International Balkan Workshop on Applied</li> </ol>
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	<p>Physics and Materials Science, Constanta, Romania, 2018. Authors: Ion Dobrin, Nikolay Djurelov, <b>Dan Enache</b>, George Dumitru, Andrei Dobrin</p> <p>14. “Conceptual Model of a Variable Gap Magnet for a GeV Electron Spectrometer”, The International Conference on Applied and Theoretical Electricity (ICATE 2018), Craiova, Romania. Authors: Ion Dobrin, <b>Dan Enache</b>, Alexandru M. Morega, Nicolae Stancu, Mihaela Morega Andrei Dobrin, Iuliu Popovici</p> <p>15. A. Chernikov, I. Dobrin, S. Kulikov, O. Culicov, I. Popovici, G. Dumitru, <b>D. Enache</b>, A. Dobrin - <i>High Temperature Superconducting Magnet System with a high-pressure chamber for the DN-12 diffractometer at the IBR-2 facility operated in magnetic field up to 5 T and a temperature range of 4.5 - 300 K</i>, IEEE TRANSACTIONS ON APPLIED SUPERCONDUCTIVITY, 2021.</p> <p>16. I. Dobrin, A.M. Morega, <b>D. Enache</b>, M. Morega, A. Dobrin - <i>HTS Dipole Magnet, Conduction Cooled for Particle Accelerators</i>, The 5th International Conference of Superconductivity and Magnetis - ICSM, April 24 – 30, 2016, Fethiye, Turcia.</p> <p>17. I. Dobrin, A.M. Morega, <b>D. Enache</b>, M. Morega, A. Dobrin, I. Popovici, A. Dobre - <i>Conduction Cooled HTS Dipolar Magnet, Realization and Experimental Results</i>, European Conference on Applied Superconductivity EUCAS, Geneva, Elveția, 2017, 17-21 September.</p> <p>18. <b>D. Enache</b>, I. Dobrin, A. Chernikov - <i>Copper – YBCO Tape Low Resistivity Junctions</i>, Proceedings of the XX International Scientific Conference of Young Scientists and Specialists (AYSS-2016), Dubna - Moscova, Rusia, 14-18 March, 2016, pp. 241 – 245, ISBN 978-5-9530-0461-9.</p> <p>19. I. Dobrin, A.D. Kovalenko, V. Ladygin, <b>D. Enache</b>, A. Dobrin, I. Popovici - <i>Numerical modeling and analysis of the magnetic field generated by the solenoid for the spin program at NICA</i>, Relativistic Nuclear Physics and Quantum Chromodynamics, XXIII International Baldin Seminar on High Energy Physics Problems, JINR-Dubna, Rusia, 2016, 19-24 September.</p> <p>20. V. P. Ladygin, A. V. Averyanov, E. V. Chernykh, <b>D. Enache</b>, Yu. V. Gurchin, A. Yu. Isupov, M. Janek, J. T. Karachuk, A. N. Khrenov, D. O. Krivenkov, P. K. Kurilkin, N. B. Ladygina, A. N. Livanov, S. M. Piyadin, S. G. Reznikov, Ya. T. Skhomenko, A. A. Terekhin, A. V. Tishevsky, T. Uesaka - <i>First results on the energy scan of the vector <math>A_y</math> and tensor <math>A_{yy}</math> and <math>A_{xx}</math> analyzing powers in deuteron-proton elastic scattering at Nuclotron</i>, Journal of Physics: Conference Series, Volume 938 012007, XVII Workshop on High Energy Spin Physics "DSPIN-2017" Dubna, Rusia, 11–15 September, 2017, doi:10.1088/1742-6596/938/1/011001.</p> <p>21. I. Dobrin, <b>D. Enache</b>, G. Dumitru, A. Dobrin, R. Pintea, Ș. Zamfir – <i>Design of a pulsed cryomagnet generating 5 T peak magnetic flux density</i>, Electrical Engineering and Computer Science, 2021, series C, Applied Mathematics and Physics, ISSN 1223-7027</p>
<p>Most relevant awards</p>	<p>1. AGIR(The General Association of the Engineers in Romania) award in 2015 for „ Superconducting coils for the superconducting electromagnets used in particle accelerators”, Bucharest.</p> <p>2. Silver Medal is awarded for “Superconductor magnetic assembly for magnetic moments measurements”, EUROPEAN EXHIBITION OF CREATIVITY AND INNOVATION (EURO INVENT), Dobrin Ion, Apostol Simona Emilia, Popovici Iuliu Romeo, Dobrin Andrei, Enache Dan, Stoica Victor.</p>
<p>Patents</p>	<p>1. RO OSIM A 2016/00885 „Superconducting magnetic system, generating an intense and uniform magnetic field”</p> <p>2. RO OSIM A 2016/00373 „Superconducting magnetic system for measurement of the magnetic moments”</p> <p>3. RO OSIM A 2017/00279 „Cryogenic cooling system for the superconducting cylindrical coils”</p> <p>4. RO OSIM A 2018/00783 „Superconducting Coils System Destinated to work as a magnetic energy storage system”</p>