

## INFORMAȚII PERSONALE



## Alexandra Farcas

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## EXPERIENȚA PROFESIONALĂ

- 01/2019–Prezent **Cercetător științific**  
Institutul Național de Cercetare-Dezvoltare pentru Tehnologii Izotopice și Moleculare INCDTIM, Cluj-Napoca (România)
- 01/2016–01/2019 **Asistent de cercetare**  
Institutul Național de Cercetare-Dezvoltare pentru Tehnologii Izotopice și Moleculare INCDTIM, Cluj-Napoca (România)
- 11/2013–11/2018 **Asistent de cercetare**  
Universitatea Babeș-Bolyai UBB, Cluj-Napoca (România)

## EDUCAȚIE ȘI FORMARE

- 10/2015–10/2018 **Doctorat în fizică**  
Universitatea Babeș-Bolyai UBB , Facultatea de fizică, Cluj-Napoca (România)  
Metode de cercetare și etica cercetării științifice, Fizică teoretică, Fizică atomică și moleculară
- 10/2013–07/2015 **Master în fizică computațională**  
Universitatea Babeș-Bolyai UBB, Facultatea de fizică, Cluj-Napoca (România)  
Programare orientată obiect în Java, Simulări de dinamică moleculară, Metode de simulări stohastice în fizică
- 10/2010–07/2013 **Diplomă de licență în fizică**  
Universitatea Babeș-Bolyai UBB, Facultatea de fizică, Cluj-Napoca (România)  
Metode numerice in Python, Analiză matematică, Algebră lineară, Mecanică și acustică

## COMPETENȚE PERSONALE

## Competențe digitale

- *Programming*: C, C++, parallel programming (MPI)
- *Shell Scripting*: csh, tcsh, bash, tcl/tk
- *Editing/Presenting*: MSOffice, LaTeX, Emacs, Adobe Acrobat
- *OS's*: Windows (XP, 7, 8), Linux (Ubuntu, openSUSE)

## Publicații

1. T. A. Beu, A. E. Ailenei, A. Farcaș, "Atomistic and Coarse-Grained Modeling of Polyethyleneimine", **Chem. Phys. Lett.**, 714, 94-98 (2018), DOI: 10.1016/j.cplett.2018.10.071.
2. T. A. Beu, A. E. Ailenei, A. Farcaș, "CHARMM Force Field for Protonated Polyethyleneimine", **J. Comput. Chem.** (2018), DOI: 10.1002/jcc.25637.
- A. Farcaș, T. A. Beu, "Complexation of DNA with Cationic Polymers", **Studia UBB Chemia**, LXIII, 2, 165 (2018).
3. T. A. Beu, A. Farcaș, "Structure and Dynamics of Solvated Polyethylenimine Chains", **AIP Conference Proceedings** 1916, UNSP 020001 (2017).
4. T. A. Beu, A. Farcaș, "CHARMM force field and molecular dynamics simulations of protonated polyethylenimine", **J. Comput. Chem.** 38 (27), 2335 (2017).
5. T. A. Beu, A. Farcaș, "Tight-binding normal mode analysis of suspended single-wall carbon nanotubes", **EPL** 113, 37004 (2016).
6. T. A. Beu, A. Farcaș, "Tight-binding vibrational analysis of single-wall carbon nanotubes", **AIP Conference Proceedings** 1694, 020001 (2015).

## Conferințe

1. T. A. Beu, A. Farcaș, A. E. Ailenei, *Coarse-grained modeling of polyethyleneimine*, Molecular Modeling in Chemistry and Biochemistry Conference 2018 (**MolMod 2018**), 28-30 October 2018, Cluj-Napoca, Romania, oral presentation.
2. T. A. Beu, A. Farcaș, A. E. Ailenei, *Atomistic and Coarse-Grained Modelling of Polyethylenimine for Gene Delivery Applications*, Polymer World Congress 2018 (**PWC 2018**), 3-6 September 2018, Stockholm, Sweden, oral presentation.
3. T. A. Beu, A. Farcaș, A. E. Ailenei, *Atomistic and Coarse-Grained Modelling of Gene Delivery Polymers*, 12th Joint Conference on Mathematics and Computer Science (**12th MaCS**), 14 June-17 June 2018, Săcuieu, Romania, oral presentation.
4. A. Farcaș, L. Buimaga Iarinca, A. S. Porav, C. Floare, L. Janosi, *Structural Features and Aggregation of NRas Proteins and it's Oncogenic Mutations*, International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (**IC-ANMBES**), 23 May-25 May 2018, Brasov, Romania, poster presentation.
5. A. Farcaș, T. A. Beu, *Cationic Polymers as Drug Delivery Systems*, International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (**IC-ANMBES**), 23 May-25 May 2018, Brasov, Romania, oral presentation.
6. L. Buimaga Iarinca, A. Farcaș, L. Janosi, *Use of Molecular Docking as a Tool for Comparative Binding Analysis of Large Peptides to Ras Wild Type and Oncogenic Proteins*, International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (**IC-ANMBES**), 23 May-25 May 2018, Brasov, Romania, poster presentation.
7. A. Farcaș, L. Buimaga Iarinca, C. Floare, L. Janosi, *Multiscale Models of Wildtype and G12V Mutant NRas Oncogenic Systems*, 11th International Conference on Processes in Isotopes and Molecules (**PIM**), 27-29 September 2017, Cluj-Napoca, Romania, poster presentation.
8. T. A. Beu, A. Farcaș, *CHARMM force field and molecular dynamics simulations of polyethylenimine chains*, 4th International Conference on Physical and Theoretical Chemistry, 18-19 September 2017, Dublin, Ireland, oral presentation.
9. L. Buimaga Iarinca, C. Floare, A. Farcaș, A. S. Porav, L. Janosi, *Use of complementary molecular modeling approaches in search of peptides binding to oncogenic Ras*, 19th International Union of Pure and Applied Biophysics (IUPAB) and 11th European Biophysical Societies' Association (**EBSA**) Congress, 16-20 July 2017, Edinburgh, UK, poster presentation.
10. L. Janosi, C. Floare, A. Farcaș, L. Buimaga Iarinca, *In silico study of Ras-binding peptides self-association*, 19th International Union of Pure and Applied Biophysics (IUPAB) and 11th European Biophysical Societies' Association (**EBSA**) Congress, 16-20 July 2017, Edinburgh, UK, poster presentation.
11. A. Farcaș, L. Buimaga Iarinca, C. Floare, L. Janosi, *Influence of G12V mutation on NRas proteins' aggregation*, 19th International Union of Pure and Applied Biophysics (IUPAB) and 11th European Biophysical Societies' Association (**EBSA**) Congress, 16-20 July 2017, Edinburgh, UK, poster presentation.
12. A. Farcaș, T. A. Beu, *Molecular Dynamics Simulations of Cationic Polymers*, 19th International Union of Pure and Applied Biophysics (**IUPAB**) and 11th European Biophysical Societies' Association (**EBSA**) Congress, 16-20 July 2017, Edinburgh, UK, poster presentation.
13. T. A. Beu, A. Farcaș, *Force Field Modeling and Molecular Dynamics Simulations of Cationic*

- Polymers*, Molecular Modeling in Chemistry and Biochemistry (**MOLMOD**), 13-15 November 2016, Cluj-Napoca, Romania, oral presentation.
14. A. Farcaș, L. Buimaga Iarinca, C. Floare, L. Janosi, *Plasma membrane model dynamics in the presence of Ras protein nanoclusters*, International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (**IC-ANMBES**), 29 June-1 July 2016, Brasov, Romania, poster presentation.
  15. A. Farcaș, L. Buimaga Iarinca, C. Floare, L. Janosi, *Ras proteins-Mammalian membrane interactions and dynamics using coarse-grained models*, National Conference in Biophysics (**CNB**), 2-4 June 2016, Cluj-Napoca, Romania, poster presentation.