

## CURRICULUM VITAE

- 1. Nume:** Airinei  
**2. Prenume:** Anton  
**3. Data și locul nașterii:** 9.01.1946, com. Zamostea, jud. Suceava  
**4. Adresa:** str. Conductelor, nr. 7, bloc F6, sc. B, ap. 6, Iasi  
**5.E-mail:** airineia@icmpp.ro  
**6. Nationalitate:** romana  
**7. Stare civilă:** necasatorit  
**8. Studii:**

<b>Instituția</b>	Universitatea „Al. I. Cuza” Iasi - Facultatea de Fizica, sectia spectroscopie	Universitatea „Al. I. Cuza” Iasi - Doctorat	Liceul Siret, jud. Suceava
Perioada:	oct. 1963 - iunie 1968	1995	1959-1963
Grade sau diplome obținute	Licenta in fizica	Doctor in fizica	

**9. Titlul științific:** Dr.

**10. Experiența profesională:**

<b>Perioada:</b>	sept. 1968 - prezent			
<b>Locul:</b>	Iasi			
<b>Instituția:</b>	Institutul de Chimie Macromoleculara „Petru Poni”			
<b>Funcția:</b>	cercetator stiintific stagiar - 1968-1973 cercetator stiintific - 1973 - 1990 cercetator stiintific gr. III - 1990-1996 cercetator stiintific gr. II - 1996-2000 cercetator stiintific gr. I - 2000-prezent Responsabil inventii si marci pe institut, 1980-1992 Director adjunct stiintific - 2000 – 2014; 2020-prezent Director – 2014-2020			
<b>Descriere:</b>	Spectroscopie de absorbtie, caracterizarea structurala a monomerilor si polimerilor, polimeri fotosensibili, polimeri de coordinatie, materiale compozite, nanoparticule			

**11. Locul de muncă actual și funcția:** Institutul de Chimie Macromoleculara „Petru Poni” Iasi; cercetator stiintific gr. I

**12. Brevete de invenții:** 13

**13. Activitate științifică:** S-au publicat 278 lucrari stiintifice in reviste de specialitate din strainatate si din tara, 9 capitole in carti, 32 lucrari in volume ale unor manifestari stiintifice, 13 brevete de inventie, participari la diferite manifestari stiintifice din tara si strainatate cu peste 400 comunicari.

**Domenii principale de activitate:**

- Polimeri conjugati azoaromatici sub forma de filme subtiri obtinuti prin fotoliza sau termoliza unor diazide aromatice (4,4'-diazidobifenil, 4,4'-diazidostilben,

diazidonaftalen). Fotoliza in solutie a unor azide aromatice si cinetica procesului. Proprietati optice.

- Comportarea la iradiere UV a unor polimeri (policlorura de vinil, poliuretani ionici, polisulfone, politioeterimide, etc.) care contin grupe cromofore azoaromatice si/sau cinamat, nitroaromatice legate covalent sau electrostatic la lantul polimer sau a unor polimeri in care au fost incorporate unitati cromofore de tip azobenzenic. Mecanismul de izomerizare a grupelor azobenzenice a fost stabilit pe baza de calcule cuantomecanice utilizand metode (TD)DFT.

- Stabilitatea termica a polimerilor: Cauzele structurale ale instabilitatii termice a policlorurii de vinil, studii pe macromodele, determinarea parametrilor cinetici ai reactiei de dehidroclorurare a policlorurii de vinil.

- Caracterizarea monomerilor si polimerilor prin metode spectrale si indeosebi cu ajutorul spectroscopiei de absorbtie in ultraviolet si vizibil, spectroscopiei de fluorescenta.

- Interactiuni intermoleculare in solutie/amestecuri de solventi ale unor compusi organici evidentiata prin spectre electronice de absorbtie, spectre de fluorescenta. Efectele solventului asupra spectrelor de absorbtie au fost tratate pe baza unor ecuatii multiparametrice deteminandu-se astfel contributia parametrilor de solvent in aceste interactiuni.

- Materiale compozite pe baza de EPDM in care au fost incorporate fibre naturale (in, canepa) nanosilice, nanoargile, PP, PEHD. S-au analizat proprietatile structurale, mecanice, termice, morfologice, dielectrice, precum si efectul iradierii cu electroni accelerati asupra acestora.

- Nanostructuri pe baza de oxizi ai metalelor tranzitionale: S-au obtinut nanoparticule de oxid de ceriu, oxid de zinc, oxid de cupru prin metode chimice sau utilizand extracte din plante. De asemenea, s-au studiat si nanostructuri de oxid de zinc, bioxid de titan, oxid de staniu dopate cu ceriu, argint, cupru, nichel, metale rare, oxid de molibden. Pentru aceste materiale s-au analizat proprietatile structurale, optice, morfologice, dielectrice, antioxidante, antibacteriene sau fotocatalitice.

**14. Membru al asociatiilor profesionale:** Societatea Romana de Chimie

**15. Limbi straine cunoscute:** engleza, franceza

**16. Specializări :**

- Institutul de Polimeri din Lodz al Academiei Poloneze de Stiinte, 1972, 3 luni. Caracterizarea polimerilor prin difuzia luminii laser la unghiuri mici;

- Institutul de Polimeri din Bratislava, Cehoslovacia, 1982, schimb interacademic, Caracterizarea compozitelor macromoleculare;

- Universitatea din Torino, Universitatea din Florenta, Italia, 1989, Metode de obtinere si caracterizare a compusilor organo-metalici.

**17. Activitati didactice:** Asistent asociat, Disciplina fizica polimerilor, Facultatea de Textile-Pielarie, Universitatea Tehnica „Gh. Asachi” din Iasi, 1979-1994.

**18. Alte mențiuni:** Premiul Academiei Romane „Gheorghe Spacu” pe anul 1977.

Data: 28.06.2023

## Lista de lucrari (selectiva)

1. Optical properties of some new azo photoisomerizable bismaleimide derivatives  
A. Airinei, N. Fifere, M. Homocianu, C. Gaina, V. Gaina, B. C. Simionescu  
International Journal of Molecular Sciences, 12, 6176-6193 (2011)
2. Morphological structure and surface properties of maleated ethylene propylene diene monomer/organoclay nanocomposites  
M. Homocianu, A. Airinei, D. M. Stelescu, D. Timpu, A. Ioanid  
Polymer Composites, 33, 379-387 (2012)
3. Structural characteristics of some high density polyethylene/EPDM blends  
D. M. Stelescu, A. Airinei, M. Homocianu, N. Fifere, D. Timpu, M. Aflori  
Polymer Testing, 32, 187-196 (2013)
4. Investigations of the preferential solvation on some poly(siloxane-azomethine)s containing dihydroxyanthraquinone units  
A. Airinei, M. Homocianu, A. Vlad, M. Cazacu  
Journal of Molecular Liquids, 186, 171-178 (2013)
5. New copoly(ether sulfone)s containing azobenzene crown-ether and fluorene moieties  
M. Iftime, R. Ardeleanu, N. Fifere, A. Airinei, V. Cozan, M. Bruma  
Dyes and Pigments, 106, 111-120 (2014)
6. On the mechanism of electrical conduction in thin films of some polysulfone-poly(alkylene oxide)-poly(dimethylsiloxane) block copolymers  
G. G. Rusu, A. Airinei, V. Hamciuc, A. P. Rambu, I. Caplanus, G. I. Rusu  
Superlattices and Microstructures, 65, 91-105 (2014)
7. Metal-polymer nanocomposites based on Ni nanoparticles and polythiophene obtained by electrochemical method  
P. Pascariu, A. Airinei, M. Grigoras, L. Vacareanu, F. Iacomi  
Applied Surface Science, 352, 95-102 (2015)
8. Photophysical and surface characteristics of electrospun polysulfone/nickel fibers  
P. Pascariu Dorneanu, A. Airinei, M. Homocianu, N. Olaru  
Materials Research Bulletin, 64, 306-311 (2015)
9. Microstructure, electrical and humidity sensor properties of electrospun NiO-SnO<sub>2</sub> nanofibers  
P. Pascariu, A. Airinei, N. Olaru, I. Petrila, V. Nica, L. Sacarescu, F. Tudorache  
Sensors and Actuators B: Chemical, 222, 1024-1031 (2016)
10. Preparation and characterization of some electrospun polysulfone nanocomposites reinforced with Ni doped SnO<sub>2</sub> nanoparticles  
P. Pascariu-Dorneanu, A. Airinei, N. Olaru, N. Fifere, C. Doroftei, F. Iacomi  
European Polymer Journal, 91, 326-336 (2017)
11. Solvatochromic analysis and DFT computational study of an azomaleimide derivative  
A. Airinei, D. L. Isac, M. Homocianu, C. Cojocaru, C. Hulubei  
Journal of Molecular Liquids, 240, 476-485 (2017)
12. Photocatalytic degradation of Rhodamine B dye using ZnO-SnO<sub>2</sub> electrospun ceramic nanofibers  
P. Pascariu, A. Airinei, N. Olaru, L. Olaru, V. Nica  
Ceramics International, 42, 6775-6781 (2016)

13. Property correlations for composites based on ethylene propylene diene rubber reinforced with flax fibers  
M. D. Stelescu, A. Airinei, E. Manaila, G. Craciun, N. Fifere, C. Varganici  
*Polymer Testing*, 59, 75-83 (2017)
14. Synthesis, characterization and photoresponsive behavior of some polysulfones containing azobenzene moieties in the main chain  
R. Ardeleanu, N. Fifere, V. Barboiu, L. Sacarescu, A. Airinei  
*Journal of Molecular Liquids*, 229, 362-370 (2017)
15. Intra-/inter molecular interactions – identification and evaluation by optical spectral data in solution  
M. Homocianu, A. Airinei  
*Journal of Molecular Liquids*, 225, 869-876 (2017)
16. Steady state and time resolved fluorescence studies of new indolizine derivatives with phenanthroline skeleton  
A. Airinei, R. Tigoianu, R. Danac, C. Al Matarneh, D. L. Isac  
*Journal of Luminescence*, 199, 6-12 (2018)
17. Preparation and characterization of Ni, Co doped ZnO nanoparticles for photocatalytic applications  
P. Pascariu, I. V. Tudose, M. Sucheaa, E. Koudoumas, N. Fifere, A. Airinei  
*Applied Surface Science*, 448, 481-488 (2018)
18. New insights into structural and magnetic properties of Ce doped ZnO nanoparticles  
N. Fifere, A. Airinei, D. Timpu, A. Rotaru, L. Sacarescu, L. Ursu  
*Journal of Alloys and Compounds*, 757, 60-69 (2018)
19. Exploring the effect of electron beam irradiation on the properties of some EPDM-flax fiber composites  
M. D. Stelescu, A. Airinei, E. Manaila, N. Fifere, G. Craciun, C. Varganici, F. Doroftei  
*Polymer Composites*, 40, 315-327 (2019)
20. On the charge-transfer excitations in azobenzene maleimide compounds: A theoretical study  
D. L. Isac, A. Airinei, D. Maftai, I. Humelnicu, F. Mocci, A. Laaksonen, M. Pinteala  
*Journal of Physical Chemistry A*, 123, 5525-5536 (2019)
21. Photochromic properties of some azomaleimide derivatives and DFT quantum chemical study of thermal cis-trans isomerization pathways  
D. L. Isac, A. Airinei, M. Homocianu, N. Fifere, C. Cojocaru, C. Hulubei  
*Journal of Photochemistry and Photobiology A: Chemistry*, 390, Article 112300/1-8 (2020)
22. Synthesis, photophysical properties and solvatochromic analysis of some naphthalene-1,8-dicarboxylic acid derivatives  
A. Nicolescu, A. Airinei, E. Georgescu, F. Georgescu, R. Tigoianu, F. Oancea, C. Deleanu  
*Journal of Molecular Liquids*, 303, Article 112626/1-10 (2020)
23. Synthesis and solvent dependent fluorescence of some piperidine-substituted naphthalimide derivatives and consequences for water sensing  
R. Tigoianu, A. Airinei, E. Georgescu, A. Nicolescu, F. Georgescu, D. L. Isac, C. Deleanu, F. Oancea  
*International Journal of Molecular Sciences*, 23, Article 2760/1-21 (2022)

24. Copper oxide nanostructures: Preparation, structural, dielectric and catalytic properties  
C. Gherasim, P. Pascariu, M. Asandulesa, M. Dobromir, F. Doroftei, N. Fifere, A. Dascalu, A. Airinei  
*Ceramics International*, 48, 25556-25568 (2022)
25. Computational and experimental investigation of photoresponsive behavior of 4,4'-dihydroxyazobenzene diglycidyl ether  
A. Airinei, D. L. Isac, N. Fifere, D. Maftei, E. Rusu  
*Results in Chemistry*, 5, Article 100709/1-11 (2023)
26. Solvent effects and metal recognition in several azulenyl-vinyl-oxazolones  
M. Homocianu, A. Airinei, O. T. Matica, M. Cristea, E. M. Ungureanu  
*Symmetry*, 15, Article 327/1-11 (2023)
25. Phyto-mediated-assisted preparation of cerium oxide nanoparticles using plant extracts and assessment of their structural and optical properties  
N. Fifere, A. Airinei, F. Doroftei, T. S. Ardeleanu, M. Dobromir, D. Timpu, E. L. Ursu  
*International Journal of Molecular Sciences*, 24, Article 8917/1-21 (2023)
26. Metal oxide nanostructures (MONs) photocatalysts for ciprofloxacin degradation  
P. Pascariu, C. Gherasim, A. Airinei  
*International Journal of Molecular Sciences*, 24, Article 9564/1-20 (2023)