

## **Curriculum Vitae**

### **Dr. Anton Airinei**

Senior Researcher I

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### **Personal Data:**

Born: January 09, 1946, Zamostea-Suceava, Romania; Romanian citizen

### **Education:**

B.S. (Oct. 1963-June 1968), Faculty of Physics, University "Al. I. Cuza" of Iasi, Romania

Ph.D. (June 1995), Faculty of Physics, University "Al. I. Cuza" of Iasi, Romania;  
Topic: *Polymer physics*

### **Professional activities:**

- "Petru Poni" Institute of Macromolecular Chemistry, Iasi, physicist (1968 – 1973); researcher (1973-1990); researcher III (1990-1996); senior researcher II (1996-2000); senior researcher I (2000 to date).
- Associate assistant in polymer physics, Textile and Leather Faculty, Technical University "Gh. Asachi" of Iasi (1979-1994).

**Honours:** Romanian Academy Prize for Chemistry, 1977

### **Present Positions:**

- Senior Researcher I at the "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Laboratory of Physical chemistry of polymers;
- Head of laboratory (2011 to date);
- Deputy director of institute (2000-2014);
- Director of institute (2014 to date).

**Foreign languages:** English, French

### **Professional experience and current research:**

- Azoaromatic conjugated polymers obtained by the photolysis or thermolysis of some aromatic diazides (4,4'-diazidobiphenyl, 4,4'-diazidostilbene, diazidonaphthalene) under the form of thin films. Photolysis in solution of some aromatic azides and their photokinetics;
- Behavior upon UV irradiation of some polymers (polysulfones, polyurethanes, polythioetherimides, polyvinyl chloride, etc.) containing chromophore moieties (azoaromatic and/or cinnamate, nitroaromatic, etc.) attached to side polymer chains or embedded in polymer matrices;
- Kinetics of trans-cis-trans isomerization process both in solution and in thin films, the effect of polymer matrix on the isomerization process;

- Thermal stability of polymers. Structural defects in polyvinyl chloride determining low thermal stability of the polymer and studies on macromodels. Determination of kinetical parameters of dehydrochlorination reaction in polyvinyl chloride;
- Characterization of monomers and polymers by spectral methods, especially using electronic absorption spectroscopy and fluorescence spectroscopy;
- Chelate polymers derived from bisphenolic or azomethine complexes and aromatic acid chlorides. Spectral, thermal, electrical and magnetic properties;
- Modified polysulfones with bisphenolic complexes. Poly(azomethine sulfone)s. Optical and electrical properties;
- Intermolecular interactions in solution in some organic compounds by ultraviolet-visible absorption spectroscopy and fluorescence spectra;
- Ethylene propylene diene monomer (EPDM)/organoclay nanocomposites. EPDM/polyolefins blends;
- metal oxide nanoparticles/polymer composites.

#### **Other activities:**

- Coordinator of some national grants/projects, member in 3 international projects, member more 35 national projects.

#### **Publications:**

- over 260 papers in national and international journals, 13 patents; 6 chapters in books; 29 articles in volumes of national or international meetings; over 835 ISI citations; more than 350 communicated papers at internal/international meetings.
- Hirsch index 16.

#### Publication list

1. Responsive behavior of 4-(N-maleimide)-azobenzene in polymers with aromatic main chain or side chain linked units  
A. Airinei, E. Rusu, V. Barboiu  
J. Braz. Chem. Soc., 21, 489-495 (2010)
2. Use of differential scanning calorimetry (DSC) in the characterization of EPDM/PP blends  
M. D. Stelescu, A. Airinei, C. Grigoras, I. G. Niculescu-Aron  
International Journal of Thermophysics, 31, 2264-2274 (2010)
3. Changes induced by solvent polarity in electronic absorption spectra of some azo disperse dyes  
A. Airinei, M. Homocianu, D. O. Dorohoi  
Journal of Molecular Liquids, 157, 13-17 (2010)
4. On the electrical and optical properties of some poly(azomethine sulfone)s in thin films  
M. Rusu, A. Airinei, G. G. Rusu, L. Marin, V. Cozan, P. Rambu, I. Caplanus, G. I. Rusu  
Journal of Macromolecular Science, Part B: Physics, 50, 1285-1297 (2011)
5. Solvatochromic effects in the UV/VIS absorption spectra of some pyridazinium ylides  
M. Homocianu, A. Airinei, D. O. Dorohoi, I. Olariu, N. Fifere

- Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 82, 355-359 (2011)
6. 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)
  7. Fluorescence quenching of anthracene by nitroaromatic compounds  
A. Airinei, R. I. Tigoianu, E. Rusu, D. O. Dorohoi  
Digest Journal of Nanomaterials and Biostructures, 6, 1265-1272 (2011)
  8. 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)
  9. Telechelic or side-functionalized diorganosiloxanes with ferrocenylimine groups  
A. Vlad, M. Cazacu, C. Turta, R. I. Tigoianu, A. Airinei, A. Arvinte  
Synthetic Metals, 161, 2659-2668 (2012)
  10. Effect of trans-cis photoisomerization of azobismaleimide derivatives on the emission intensity of an arylenevinylene fluorophore  
N. Fifere, A. Airinei, C. Gaina, V. Gaina, M. Grigoras, B. C. Simionescu  
Revue Roumaine de Chimie, 57, 609-614 (2012)
  11. New thermoplastic ionic elastomers based on MA-g-EPDM with advanced characteristics  
A. Airinei, M. Homocianu, D. Timpu, D. M. Stelescu  
Thermoplastic Elastomers, A. Z. El-Sonbati, Ed., Intech, Rijeka, Croatia, 371-398 (2012)
  12. 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)
  13. 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)
  14. Fluorescence modulation and photochromism in azobismaleimide derivatives  
N. Fifere, A. Airinei, C. Gaina, V. Gaina, M. Grigoras  
Journal of Fluorescence, 24, 345-353 (2014)
  15. Photophysical behavior of some aromatic poly(1,3,4-oxadiazole-ether)s derivatives  
A. M. Ipate, M. Homocianu, C. Hamciuc, A. Airinei, M. Bruma  
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 123, 167-175 (2014)
  16. 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)
  17. Preparation and characterization of NiO, ZnO and NiO-ZnO composite nanofibers by electrospinning method  
P. Pascariu Dorneanu, A. Airinei, N. Olaru, M. Homocianu, V. Nica, F. Doroftei  
Materials Chemistry and Physics, 148, 1029-1035 (2014)
  18. About intermolecular interactions in binary and ternary solutions of some azobenzene

derivatives

L. M. Ivan, V. Closca, M. Burlea, E. Rusu, A. Airinei, D. O. Dorohoi  
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 136(Part C),  
2008-2014 (2015)

19. Solvent effects on the photophysical properties of poly[1,4-dihydroxyanthraquinone-imine-1,3-bis(phenylene-ester-methylene)tetramethyldisiloxane]  
P. Pascariu Dorneanu, M. Homocianu, I. R. Tigoianu, A. Airinei, M. Zaltariov,  
M. Cazacu  
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 134, 218-224  
(2015)
20. Environment effects on the spectral properties of some fluorinated poly(oxadiazole ether)s in binary solvent mixtures  
M. Homocianu, A. M. Ipate, C. Hamciuc, A. Airinei  
Journal of Luminescence, 157, 315-320 (2015)
21. 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)
22. 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)
23. Photophysical properties of some poly(siloxane-azomethine)s  
I. R. Tigoianu, A. Airinei, V. Ribitsch, C. Gruber, N. Fifere, A. Vlad, M. Cazacu  
High Performance Polymers, 27, 539-545 (2015)
24. Relaxation behavior of flax-reinforced ethylene-propylene-diene rubber  
M. Cristea, A. Airinei, D. Ionita, M. D. Stelescu  
High Performance Polymers, 27, 676-682 (2015)
25. 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)
26. Structural, optical and magnetic properties of Ni doped SnO<sub>2</sub> nanoparticles  
P. Pascariu (Dorneanu), A. Airinei, M. Grigoras, N. Fifere, L. Sacarescu, N. Lupu,  
L. Stoleriu  
Journal of Alloys and Compounds, 668, 65-72 (2016)
27. 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)