

Fouad M. Aliev

Physicist

University of Puerto Rico, Río Piedras Campus

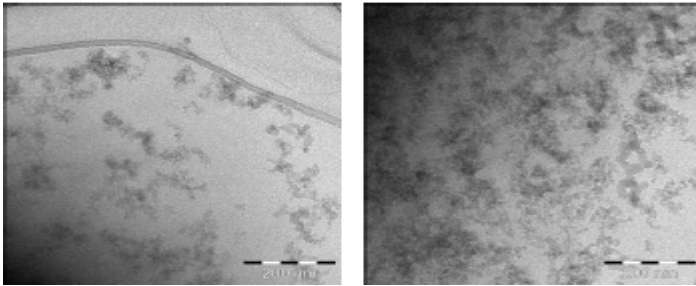


Biography

Born in the Soviet Union, Aliev obtained both a Ph.D. and a Doctor of Science degree in Physics and Mathematics from Leningrad State University. Aliev is a competitive researcher and Professor at the Department of Physics of the [University of Puerto Rico, Río Piedras Campus](#), where he contributes to fundamental aspects of nano scale condensed matter physics, and nanoscience and technology projects sponsored by the [Department of Defense](#), [NASA](#), and the [National Science Foundation](#). Aliev's research team adds new knowledge and innovative concepts in the development of high-performance composite materials by synthesis and investigations of soft condensed matter (organic material) filled with nanosize inorganic particles. The research is focused on investigations of the effects of filling of liquid crystals and polymers with nanoparticles, which result in the appearance of novel nanoscale structures, modification of physical properties and novel phenomena absent in bulk material. Aliev's approach to understand nanoscale materials is comprehensive, in that he investigates different aspects of the relationship between molecular structure and physical properties by using such powerful investigation techniques as ultra Broadband Dielectric Spectroscopy, Static Light Scattering, Photon Correlation Spectroscopy, Brillouin light scattering and Differential Scanning Calorimetry.



Polymers filled with 12mm Aerosil particles (general view) — concentration increases from left to right.



Distribution of nanoparticles (concentration 2% and 10%) inside polymer.

Teams

[Cluster I: Functional Dispersed Nanostructures](#)

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Education

- D.Sc. in Physics, Leningrad State University (1989)
- Ph.D. in Physics, Leningrad State University (1975)
- M.Sc. in Physics, Leningrad State University (1971)

Appointments

2001– 2002	Sabbatical, University of Colorado at Boulder, Boulder, Colorado, United States
2000– 2001	Sabbatical, Nanostructured Liquid Crystals Project, Tsukuba, Ibaraki, Japan
1996– present	Professor, Department of Physics, University of Puerto Rico, Río Piedras Campus, San Juan, Puerto Rico
1993– 1996	Associate Professor, Department of Physics, University of Puerto Rico, Río Piedras Campus, San Juan, Puerto Rico
1992– 1993	Visiting Scientist, Department of Physics and Astronomy, University of Pittsburgh, Pittsburgh, Pennsylvania, United States
1992	Visiting Scientist, Liquid Crystal Institute, Kent State University, Kent, Ohio, United States
1989– 1993	Professor, Institute of Precision Mechanics and Optics, Saint Petersburg, Russia
1977– 1989	Associate Professor, Institute of Precision Mechanics and Optics, Saint Petersburg, Russia
1974– 1977	Research Scientist, Institute of Physics, Leningrad State University, Saint Petersburg, Russia

Honors and awards

- Scholarly Productivity Award — for contributions to the development of scientific research in Puerto Rico, Puerto Rico Experimental Program to Stimulate Competitive Research (1994, 1995, 1997, 1998, 2000, 2001)
- Diploma — for outstanding executives in the field of research in the areas of science and technology at the University of Puerto Rico, University of Puerto Rico President's Office (2000)

Publications

1. F. M. Aliev, V. Dolidze, I. J. Lopez, and M. Rivera, "Relaxation Processes and Glass Transition in Polymer Filled with Nanoparticles", *Macromolecular Simposia*, 267, 63 (2008)
2. F. M. Aliev, E. Arroyo, and V. Dolidze, "Influence of confinement on molecular and director reorientational dynamics of liquid crystal", *Journal of Non-Crystalline Solids*,
3. F. M. Aliev, V. Dolidze, and I. J. Lopez, "Relaxation processes in polymers filled with nanoparticles", *Journal of Non-Crystalline Solids*,

Grants

1. F. M. Aliev, C. R. Cabrera, L. F. Fonseca, K. H. Griebenow, A. J. Hernández, Y. Ishikawa, R. S. Katiyar, M. M. Martínez, A. R. Mayol, G. Morell, W. Otaño, R. G. Raptis, and B. R. Weiner. Center for Advanced Nanoscale Materials (CANM) NASA University Research, National Aeronautics and Space Administration, URC, 5 years, October 2008, Multiple PIs, Approved, \$6,000,000.
2. F. M. Aliev. Relaxation Processes and glass transitions in novel polymer nanocomposites, Other, FIPI, UPR, 2 years, August 2008, Single PI, Approved, \$30,000.

Presentations

1. F. M. Aliev, E. Arroyo, and V. Dolidze (August 2008) "Influence of confinement on molecular and director reorientational dynamics of liquid crystals" in 10th International Conference on Dielectric & Related Phenomena .
2. F. M. Aliev, V. Dolidze, and I. J. Lopez (August 2008) "30. Relaxation processes in polymers filled with nanoparticles" in 10th International Conference on Dielectric & Related Phenomena.