



Curriculum Vitae

VLADIMIR E. YUDIN, H-index = 17. Number of citations =622
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(1) Education

Institution and Location	Degree and Field of Study	Date
a) Institute of Macromolecular Compounds RAS, St.Petersburg	Doctor of Science, Professor (physics of polymers)	2000
b) Graduate school at the Institute of Macromolecular Compounds RAS, St.Petersburg	Ph.D in Physics and Mathematics (physics and mechanics of polymers)	1980-1984
c) Moscow Institute of Physics and Technology	Master of Science (molecular and chem. physics)	1972-1978

(2) Professional Work Experience:

1980-1984 - experimental work and writing of the dissertation under the name: "Mechanism of Fracture of Fiber Reinforced Composites Based on Thermally Stable Type of Matrices". In 1985 this dissertation was successfully approved.

1986-1990 - investigation of main features of viscoelastic behavior of thermosetting and thermoplastic polyimide matrices in composites and influence of dissipative properties of the matrix and fiber-matrix interface on the process of failure of fiber's composites (acoustic emission and NDE methods).

1995-1996 - Grant "Development of New Flame-Resistant Ultra-Lightweight Composites Based on IPO Polyimide Resin" from the William and Mary Greve Foundation (USA)

1996 - Grant J9E100 "Localization of Acoustic Emission in the Fracture of Fiber Composites" from the International Science Foundation and Russian Government.

2000 - Doctor of Science in polymer physics.

2005 and 2007 – Grants from PPG INDUSTRIES, INC. (USA)

2014 -2018 - Grant from Russian Science Foundation for organization the laboratory "Polymer materials for tissue engineering and transplantation" at St.Petersburg Polytechnical University

Actual position - Head of the laboratory "Mechanics of Polymer and Composite Materials" at the Institute of Macromolecular Compounds RAS.

17 research scientists work at the laboratory this time.

Professor at the St.Petersburg Polytechnical University.

Course of lectures "Polymer Materials for medical application" since 2004 year up to now.

(3) Research Areas:

- * Materials science – experiment and theory
- * Polymer processing and rheology
- * Viscoelastic properties of polymer composite
- * Processing of composite materials
- * Fibers reinforced composites
- * Organic-inorganic nanocomposites
- * Polymer matrices for biomedicine

List of Main Publications (1999-2014):

1. I.P.Dobrovolskaya, **V.E.Yudin**, P.V.Popryadukhin, E.M.Ivan'kova, A.S.Shabunin, I.A.Kasatkin, P.Morganti. Effect of chitin nanofibrils on electrospinning of chitosan-based composite nanofibers // Carbohydrate Polymers 194 (2018) 260–266.
2. P.V. Popryadukhin, G.I.Popov, I.P. Dobrovolskaya, **V.E. Yudin**, V.N. Vavilov, G.Yu. Yukina, E.M. Ivan'kova, I.O. Lebedeva. Vascular prostheses based on nanofibers from aliphatic copolyamide. Cardiovascular Engineering and Technology, Vol. 7, No. 1, March 2016, 78–86.
3. I.P. Dobrovolskaya, P.V. Popryadukhin, V.E. Yudin, E.M. Ivan'kova, V.Yu. Elokhovskiy, Z. Weishauptova, K. Balik. Structure and properties of porous films based on aliphatic copolyamide developed for cellular technologies. Journal of Materials Science: Materials in Medicine. 2015, Vol. 26, No. 1, 26:46
4. Nazarychev V., Larin S., Yakimansky A., Lukasheva N., Gurtovenko F., Gofman I., **Yudin V.**, Svetlichnyi V., Kenny J., Lyulin S. Parameterization of electrostatic interactions for molecular dynamics simulations of heterocyclic polymers. J. Polym. Sci. B. 2015. V. 53, No. 13. P. 912-923.
5. Lyulin S. V., Larin S. V., Gurtovenko A. A., Nazarychev V. M., Falkovich S. G., **Yudin V. E.**, Svetlichnyi V. M., Gofman I. V. and Lyulin A. V. Thermal properties of bulk polyimides: insights from computer modeling versus experiment. Soft matter, 2014, v.10, 1224-1232.
6. Yingji Wu, **Vladimir E. Yudin**, Joshua U. Otaigbe, Elena N. Korytkova, Sergei Nazarenko. Gas Barrier Behavior of Polyimide Films Filled with Synthetic Chrysotile Nanotubes. Journal of polymer science, part B: Polymer Physics, 2013, v.51, 1184–1193.
7. I. V.Gofman , **V.E.Yudin**, O.Orell , J.Vuorinen , A.Ya. Grigoriev, V.M.Svetlichnyi. Influence of the degree of crystallinity on the mechanical and tribological properties of high-performance thermoplastics over a wide range of temperatures: from RT up to 250°C. Journal of Macromolecular Science, Part B: Physics. 2013. V. 52. No 12. P. 1848-1860.
8. E. Huttunen-Saarivirta, G.V.Vaganov, **V.E.Yudin**, J.Vuorinen. Characterization and corrosion protection properties of epoxy powder coatings containing nanoclays. Progress in organic coatings, 2013, V.76, No.4, pp. 757-767.
9. E. Huttunen-Saarivirta, **V.E. Yudin**, L.A. Myagkova, V.M. Svetlichnyi. Corrosion protection of galvanized steel by polyimide coatings: EIS and SEM investigations. Progress in Organic Coatings, 2011, v. 72, 269– 278.
10. **V.E.Yudin**, J.U.Otaigbe. Thermally stable polyimide/4,4'-bis(4-aminophenoxy) phenylsulfone-modified clay nanocomposite. In book “Thermally stable and Flame retardant polymer nanocomposites”, edited by Vikas Mittal, Cambridge University press, 2011, p.121-142.
11. **V. E. Yudin**, J. U. Otaigbe, S. I. Nazarenko, W. D. Kim, E. N. Korytkova. A comparative study on the mechanical and barrier characteristics of polyimide nanocomposite films filled with nanoparticles of planar and tubular morphology. Mechanics of Composite Materials, Vol. 47, No. 3, 2011, 335-342.
12. V.E. Smirnova, I.V. Gofman, **V.E. Yudin**, I.P. Dobrovolskaya, A.N. Shumakov, A.L. Didenko, V.M. Svetlichnyi, E.Wachtel, R. Shechter, H. Harel, G. Marom. Orientated crystallization in drawn thermoplastic polyimide modified by carbon nanofibers. Polym. Eng. Sci., 49 (2009), 217-222.
13. **V.E. Yudin**, V.M. Svetlichnyi, A. N. Shumakov, R. Schechter, H. Harel, G. Marom. Morphology and mechanical properties of carbon fiber reinforced composites based on semicrystalline polyimides modified by carbon nanofibers. Composites: Part A 39 (2008) 85–90.
14. B.G. Olson, J.J. Decker, S. Nazarenko, **V.E.Yudin**, J.U.Otaigbe, E.N.Korytkova, V.V.Gusarov, Aggregation of Synthetic Chrysotile Nanotubes in the Bulk and in Solution Probed by Nitrogen Adsorption and Viscosity Measurements, Journal of Physical Chemistry: Part C 112(33), 12943-12950, 2008.

15. **V.E.Yudin**, J.U.Otaigbe, V.M.Svetlichnyi, E.N.Korytkova, O.V.Almjasheva, V.V.Gusarov. Effects of nanofiller morphology and aspect ratio on the rheo-mechanical properties of polyimide nanocomposites, *eXPRESS Polymer Letters*, 2008, Vol.2, No.7, 485–493.
16. Kurose, Takashi; **Yudin, Vladimir E.**; Otaigbe, Joshua U.; Svetlichnyi, V. M. Compatibilized polyimide (R-BAPS)/BAPS-modified clay nanocomposites with improved dispersion and properties. *Polymer* (2007), 48(24), 7130-7138.
17. **V.E.Yudin**, J.U.Otaigbe, S.Gladchenko, B.G. Olson, S.Nazarenko, E.N.Korytkova, V.V.Gusarov. New polyimide nanocomposites based on silicate type nanotubes: Dispersion, processing and properties. *Polymer*, v.48, 2007, p.1306-1315.
18. V.E. Smirnova, I.V. Gofman, T. A. Maritcheva, **V. E. Yudin**, K. Eto, T. Takeichi, Y. Kaburagi and Y. Hishiyama. The effect of different orientations of rigid rod polyimide films on the graphitized products. // *Carbon* 45 (2007) 839–846.
19. **V.E.Yudin**, J.U.Otaigbe, L.T.Drzal, V.M.Svetlichnyi. Novel Semicrystalline thermoplastic R-BAPB type polyimide matrix reinforced by graphite nanoplatelets and carbon nanoparticles. *Advanced Composites Letters*, 2006, Vol.15, No.4, 137-143.
20. **V. E. Yudin**, J. U. Otaigbe, Tho X. Bui and V. M. Svetlichnyi. Structure and Properties of polyimide bonded magnets processed from prepolymers based on diacetyl derivatives of aromatic diamines and dianhydrides. *Journal of Applied Polymer Science*, 2006, 100(1), pp. 478-485.
21. **V.E.Yudin**, A.Y. Feldman, V.M.Svetlichnyi, A.N.Shumakov, G. Marom. Crystallization of R-BAPB type polyimide modified by carbon nano-particles. *Composites Science and Technology*, 2007, v.67, 789-794.
22. **V.E. Yudin**, G.M. Divoux, J.U. Otaigbe, V.M. Svetlichnyi. Synthesis and rheological properties of oligoimide/montmorillonite nanocomposites. *Polymer*, v.46, 2005, pp.10866-10872.
23. **V. E. Yudin**, V. M. Svetlichnyi, A. N. Shumakov, D. G. Letenko, A.Y. Feldman, G. Marom. The Nucleating Effect of Carbon Nanotubes on Crystallinity in R-BAPB-Type Thermoplastic Polyimide. *Macromol. Rapid Commun.* 2005, 26, 885–888.
24. **V.E.Yudin**, V.M.Svetlichnyi, G.N.Gubanova, T.E.Sukhanova, A.L.Didenko, V.V.Kudryavtsev, S.Ratner, G.Marom. Semicrystalline polyimides for advanced composites. In the book “Polyimides and other high temperature polymers” (Ed. K.L.Mittal), 2003, Vol.2, p.523-532.
25. **V. E. Yudin**, J. U. Otaigbe, T.X. Bui, V.M.Svetlichnyi, Polyimide bonded magnets: processing and properties, *J. Applied Polymer Sci.*, 2003, v.88, p.3151-3158.
26. **V.E.Yudin**, M.Ya. Goykhman, K. Balik, P. Glogar, P. Polivka, G.N. Gubanova, V.V. Kudryavtsev. Carbon/carbon composites based on polyimide matrix with coal tar pitch. *Carbon*, 2002, v. 40, No.9, p.1427-1433.
27. **V.E.Yudin**, V.M.Svetlichnyi, G.Marom, S.Ratner, G.N.Gubanova, T.E.Sukhanova, and V.V.Kudryavtsev. Semicrystalline polyimide matrix for carbon fiber reinforced composites: processing and properties. *J. Applied Polymer Sci.*, 2002, v.83, p.2873-2882.
28. J.U.Otaigbe, **V.E.Yudin**, and V.N.Artemieva. Influence of chemical structure of polyimide prepolymer on rheo-mechanical properties of polyimide foam composites. *Polymer composites*, 2001, 22 (1), p.155-164.
29. **V.E.Yudin**, B.Cook, J.U.Otaigbe. Thermal diffusivity and conductivity of polyimide foam composites. *J.Mater. Sci. Letter*, 2000, No.1, p.65-68.
30. **V. E.Yudin**, M. Ya. Goikhman, K. Balik, P. Glogar, G. N. Gubanova and V. V. Kudriavtsev. Carbonization behavior of some polyimide resins reinforced with carbon fibers. *Carbon*, 2000, v.38, p.5–12.
31. **V.E.Yudin**, J.U.Otaigbe, and V.N.Artemieva. Processing and properties of new high-temperature, lightweight composites based on foam polyimide binder. *Polymer Composites*, 1999, 20 (3), p.337-45.