

Dr Alexey Kondyurin

MSc, PhD

Curriculum Vitae

CAREER ACHIEVEMENTS

- **200+** scientific publications, of which **5** books, and **113** peer reviewed papers including **Nature Biotechnology** (IF: **31**), **Proceedings of National Academy of Science** (IF: **10**) and **Nanoletters** (IF: **13**)
- **5** patents in material science, including patents with industry partner Boston Scientific (USA)
- **Commercialisation** of results in space industry, car industry and medical devices industry
- Chief and co-investigator in **27** project funded by **NHMRC, ESA, NASA, BMBF, RFBR, US Department of Energy, Humboldt Foundation and industry**
- Research leadership, management and policy development experience
- Various national and international collaborations
- **25+** years university teaching, research and management experience
- h-index (Google Scholar) **20**, i10-index **40**
- Scientist in charge of flagship plasma facility at the University of Sydney

Education and employment experience

PERSONAL DETAILS

Address: University of Sydney, NSW 2006, Australia
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Telephone: +61-(2)-93512484
Citizenship: Australian
Languages: English, Russian, German (basic)

EDUCATION

1992 Doctor of Philosophy St. Petersburg Technological Institute
1984 Master of Science Perm State University

EMPLOYMENT HISTORY

Sep 05 – Current Senior researcher, School of Physics, University of Sydney, Sydney
Sep 01 – Aug 05 Researcher, Helmholtz-Zentrum Dresden-Rossendorf, Dresden
Dec 01 – Mar 05 Humboldt fellow and Researcher, Leibniz-Institut für Polymerforschung, Dresden
Sep 88 – Aug 01 Senior researcher, Institute of Technical Chemistry, Perm
Sep 84 – Sep 88 Researcher and lecturer, Perm state university, Perm

PROFESSIONAL MEMBERSHIP

Deputy Organizer COSPAR Scientific Assembly (Committee of Space Research under United Nation patronage), session F4.4 "Influence of space flight environment on biological systems", since 2000
Member Advisory board of Open Aerospace Engineering Journal, since 2010
Guest editor Advanced Space Research, 2002
Vice-academician Russian Academy of Natural Science, since 2006
Member Society of Plastic Engineers (SPE), member of organiser team in NSW (Australia), since 2005
Member American Chemical Society (ACS), since 2005

AWARDS

Astronautic Association Award "Medal of Achievements in Astronautics", 2008
Alexander von Humboldt Fellowship, 2001

JOURNAL ARTICLE REVIEWING

I am a regular journal article reviewer for: Nanoletters, Langmuir, Advanced Space Research, Journal of Applied Polymer Science, Surface Coating Technology, Vacuum, Biomacromolecules, Journal of Photochemistry and Photobiology A: Chemistry, Journal of Biomaterials Science: Polymer Edition, The Journal of Gene Medicine, Journal of Alloys and Compounds

Research

My scientific projects:

1. Raman and infrared spectroscopy of intermolecular interactions

Supported by Ministry of Education. September 1984 to September 1988.

My role: investigator.

I recorded and analysed Raman and Infrared spectra of solid, liquids and gases in one cell in -196C to 350C temperature range. Changes of spectra of substances in different media and normal coordinate analysis of molecular vibrations (calculation of force constants from frequencies and v.s.) were used for calculation of intermolecular force constants. We showed, that the calculation of intermolecular force constants is available from difference of experimental spectra of molecule in free state (gas or inert matrix) and in condensed state. Antimony trihalogenide, crystallohydrates, carboxyl acids, polyurethane and others substances have been investigated. Published in a number of articles and abstracts, for example, *Vibr. Spectrosc.* 1991 (2) 183; *J. Raman Spectrosc.* 1991 (22) 249; *J. Phys. Chem.* 1992 (96) 11038; **book**: Kozulin, Klyachkin, Kondyurin, *Vibrational spectra and intermolecular interactions. Phenomenological method of intermolecular force constant calculation*, Ekaterinburg, Russian Academy of Science, 1999, 202.

2. Adhesion of rubber materials to highly filled plasticised elastomers.

A number of projects supported by industry. September 1988 to September 1992.

My role: investigator, leader of group. That was a topic of my PhD dissertation.

Interface and adhesion of rubber materials (EPDM, EPM, SKF, Nitril, Polyisoprene, polybutadiene rubbers) to epoxy, quinine and isocyanate elastic highly filled plasticised adhesives was investigated. The influence of chemical reactions; diffusion of plasticiser and active components; filler particles packing; adhesive flow; roughness, degradation and oxidation of the surface; and wettability on adhesion were analysed. The general theory of "ideal" adhesion joint was developed based on multilevel structure of polymer materials. The methods of chemical modification, UV irradiation, plasma and ion beam were developed to get "ideal" adhesion joint. In particular, oxygen containing groups and **free radicals** are proposed as a reason of adhesion strength. The difference in adhesion of EPM and EPDM rubbers to epoxy adhesive was shown and explained. Most results were published in customer reports. Some results were published in *J. Adhes. Sci. Technol.* 1992 (6(10)) 1137; *J. Appl. Polym. Sci.* 1993 (48) 1417; *J. Appl. Polym. Sci.* 1996 (62) 1; *J. Adhesion* 2002 (78) 431. The results were commercialised in industry.

3. Study of polymers after ion beam treatment

Supported by US Department of Energy. Coordinator is Dr. R.Stinnett, **Sandia National Laboratories**, USA. January 1994 to December 1996.

My role: Principal Investigator.

First time the ion beam treatment (implantation, modification) with using of high aperture ion beam sources (100 mm diameter of beam) was applied to polymer materials. High aperture of the beam increased significantly effectiveness of the polymer processing and made this treatment profitable for industry. The improvement of adhesion, wettability, hardness, environment stabilisation of polymers was invented. Industrial size equipment and processing of polymers have been demonstrated. **First time** multilayer structure of surface modified layer is discovered. **Free radical** reactions in irradiated polymers were proved as a reason of structure changes, improvement of adhesion, wettability and hardness. The results were commercialised in US industry.

Results are published in Vacuum 1996 (47) 1085; J. Appl. Polym. Sci. 1998 (69) 1071; in **book** A. Kondyurin, M. Bilek, Ion Beam Treatment of Polymers. Application aspects from medicine to space, Elsevier, Oxford, 2008.

4. Study of polymers after ion beam treatment

Supported by US Department of Energy. Coordinator is Dr.D.Rej, **Los-Alamos National Laboratory**, USA. January 1994 to December 1996.

My role: Principal Investigator.

The structure changes in ion beam irradiated polymers were investigated: crosslinking (gel-fraction), carbonisation (XPS spectra), free radicals and oxidation, morphology of the surface, hardness (scratch test), tensile test of irradiated polymers, ion beam assisted deposition of metal coating on polymer.

5. Biocompatibility of polyurethane in medical implants

Supported by Ministry of Education. January 1994 to September 2001.

My role: co-investigator.

Technology of medical grade polyurethane shell was developed and used for production of breast, finger joint and diaphragm implants. Animal tests, simulation body test, mechanical strength, synthesis of PU from solution, PU domain structure, FTIR spectra, SEM, XPS spectra were used. **First time** the ion beam treatment was invented to Improve biocompatibility of polyurethane shell so, that the foreign body reaction was eliminated. It was observed in experiments with mice and rats. Published in, for example, Proc. of 12th Intern. Conf. on High-Power Particle Beams, Haifa, Israel, June7-12, 1998. Ed. by M.Markovits and J. Shiloh, vol 2, p. 997-1000; Int. Polymer Sci. and Technol., v.25, N4, 1998, p.T/81; J. Raman Spectrosc. 2002 (33) 769. The results were commercialised in production of medical implants for human body.

6. Utilisation of polyurethanes by thermoglycolis

Supported by industry. January 1995 to December 1999

My role: co-investigator.

Thermoglycolysis of polyurethane was developed for utilisation of polyurethane waster in polyurethane production processing. Published in International Polymer Science and Technology, 1999, Vol. 26, number 4, T/53.

7. Dosage system of liquid components in biotechnological processes of acrylamide synthesis

Supported by industry. January 1997 to December 1999.

My role: co-investigator.

I have developed miniature UV spectrometer and applied it for acrylamide monitoring in-situ. The results were commercialised in biochemical processing.

8. Synthesis of metal granules by ion beam implantation into liquid polymer matrix

Supported by RFBR. January 1999 to December 2001.

My role: co-investigator.

The metal magnetic nanoparticles were synthesised with ion implantation into silicon polymer during curing. The implantation was started, when the film was liquid, and finished, when the film was cured. We showed, how the viscosity of the film influences on size and magnetisation of metal particles. Published in Nuclear Instruments and Methods in Physical research. Section B: Beam interactions with Materials and Atoms, v.206, 2003, pp. 1115.

9. Calix[4]resorcinarene as artificial ion channels

Supported by DFG. June 1999 to September 2001

My role: co-investigator.

An aim of the project was to make artificial ion channel in lipid membrane (2 nm) with using of calix[4]resorcinarene. The synthesis of calix[4]resorcinarene is complicate and some steric isomers are synthesised. I found specific lines in FTIR spectra of calix[4]resorcinarene to recognise isomers, what can be used for ion channels. Published in Journal of Molecular Structure, 2001(563-564)503.

10. Polymerisation of epoxy composite material in free space

Initiative study. October 1995 to January 1999.

My role: Principal Investigator.

First time I invented curing of composite materials directly in space for creation of large space constructions on Earth orbit. First experiments on curing of epoxy composite materials were done in high vacuum, plasma and ion beam, and at low temperature simulating free space environment. I found main principles for compositions curable in space environment. Published in Int. Polymer Sci. and Technol., 1998 (25/4) 78-80; J. of the Japan Soc. of Microgravity Appl., 1998 (15, Suppl.II) 61-65.

11. Polymerisation of composite material in stratosphere

Supported by industry. January 1999 to December 1999

My role: Principal Investigator.

First time the curing of composite materials directly in stratosphere (35-40 km altitude) was proposed. Ground experiments of curing in environment simulating stratosphere conditions were done. The flight experiment was prepared. The flight experiment "Plastic" was planned during RE/MAX Global Balloon Expedition (USA) with NASA participation. The results of ground experiments are published in Acta Astronautica, 2001 (48) 109; Acta

Astronautica, 2001 (48) 169. The mission was announced and overviewed in local and national **news agencies**.

12. Production of a Polymer with Drug Release as a Coating for Stents

Supported by BMBF, Germany. September 2001 to August 2003.

My role: Principal Investigator.

First time method of direct synthesis of crosslinked polyurethane coating with drug on vascular stent was invented. **First time** plasma Immersion Ion Implantation was invented for flattening of drug release kinetics. The modified coating provided toxic drug release longer, than usual (from 8 to 200 hours). The results have been **patented** and published in J. Biomater. Sci. Polymer Edn. 2004 (15) 145. The results were commercialised.

13. Deposition of polymer layer including tantalum particles on vascular stents

Supported by BMBF, Germany. September 2001 to August 2003

My role: Principal Investigator.

First time the vascular stents with polyurethane coating and with embedded tantalum particles providing high X-ray contrast was invented. The stents with improved X-ray contrast become easy visible during installation in human body. Published in J. Bioactive and Compatible Polymers, 2005 (20) 77.

14. Adhesion of rubber sealing to acrylic adhesive in car processing

Supported by industry. January 2002 to December 2002.

My role: co-investigator.

German car production company had problem with adhesion of new improve rubber sealing. We have investigated adhesion and interface phenomena in adhesion joint of rubber and acrylic adhesive. Our recommendations were used to improve adhesion of new rubber sealing for car's door in industry.

15. Synthesis of Polyurethane coating on urine catheters

Supported by industry. January 2004 to December 2004.

My role: co-investigator.

Direct synthesis of polyurethane coating on complex shape urine catheter was developed for UROKINK Frommelius GmbH. **First time** the ion beam treatment of polyurethane was used to attach slipping agent to decrease friction in human body.

16. HADES (High Acceptance Di-Electron Spectrometer)

Supported by EU. January 2004 to December 2004

My role: co-investigator.

The High Acceptance Di-Electron Spectrometer (HADES) at the heavy ion synchrotron SIS of GSI, Darmstadt, is a high-resolution second generation detector system for lepton pair spectroscopy. The malfunction of the chamber the operating high voltage indicated a shortcut to ground involving the first anode and first cathode layer. I was responsible for analysis of the material

and found a reason of malfunction. Published in IEEE Transactions on Nuclear Science, 2004(51/3)939.

17. Dewetting of thin polymer film on rough substrate

Supported by DFG. January 2004 to September 2005

My role: co-investigator.

First time the theory of dewetting of thin film on rough surface was developed and proved with experiment. Published in J. Phys. D: Appl. Phys. 2008, 41,065307 and 065306.

18. Nanostructured carbonized thin films produced by PIII of block-copolymer assemblies

Supported by EU, SPP, DFG and CNRS. January 2005 to December 2011

My role: Principal Investigator.

First time the nano-structured block-co-polymer was transformed by ion beam implantation to fully carbonised film with regular holes of 15 nm diameter. **First time** the Moire patterns was observed in nano-size. Published in Nano letters, 2007 (7/12) 3628 (highlighted in Nature Materials, vol.6, December 2007, p.919.); Nanotechnology, 2011 (22/30) 305603.

19. Nanolayer of polymer on black carbon - rubber mechanics

Supported by DFG and RFBR. January 2005 to December 2008

My role: co-investigator.

The unique mechanical properties of rubber materials (car wheels, thermoprotecting coatings) are explained by specific "glassy layer" of rubber on black carbon filler. However, no one could measure the "glassy layer" in experiment. I proposed experiment when the "glassy layer" can be simulated.

First time the mechanical properties of nanosize rubber layer on carbon was measured with AFM. We have shown, that the thin adsorbed rubber has extremely high stiffness. This is **first direct observation** of the "glassy layer" of the rubber Published in Mechanics of composite materials and constructions, Vol. 14, No. 1, pp. 3-15, 2008.

20. Improved expandable balloons for vascular stents

Supported by industry. January 2003 to August 2005

My role: Principal Investigator.

Pebax (polyamide) balloons are used for inserting of vascular stents into blood vessel. Low mechanical strength of thin wall of the balloon can be a reason of balloon breakage and death of patient. The ion beam implantation of the balloon was invented to improve mechanical strength against scratches during inserting into blood vessel. Patented. Published in Nuclear Instruments and Methods in Physics Research, 2006(B251)407.

21. Hydroxyapatite deposition on solid substrates as in-vivo model

Supported by Marie Curie Foundation, DFG and Bulgarian Academy of Science. January 2002 to September 2005

My role: co-investigator.

Kinetics of Hydroxyapatite coating on metal and polymer substrates in simulating body fluid was investigated. The ion beam implantation of the substrate surface improved the growing. Published in Annals of Transplantation, 2004(9(1a))58-60; Proc. SPIE 5449,41,2004; Applied Surface Science,2004(235(1-2))76; Vacuum, 2004(76)339.

21. Ion Implantation of ePTFE vascular grafts for Increased wettability and improved cell adherence

Supported by industry. January 2003 to December 2004

My role: co-investigator.

We found that the plasma Immersion Ion Implantation (PIII) of ePTFE improves cell adhesion. The cells adhere directly on PIII treated PTFE and ePTFE. Cell metabolism is sufficient for cells attached on PIII treated PTFE. The reason of improved cell adherence is absorbance of bioactive molecules from cells on PIII treated surface due to reaction with active groups including free radicals. **First time** it was shown, that the proteins after cells are attached strongly on PIII treated surface. **First time** the sulphur peak S2p in XPS spectra was proposed for protein detection, when O1s and N1s peaks of protein are overlapped with substrate peaks. The investigation was directed to improve endothelialisation of the vascular grafts produced by Boston Scientific. Patented.

22. Polymerisation of epoxy composite material in free space

Supported by Alexander von Humboldt Fellowship. December 2001 to March 2003

My role: Principal Investigator.

Various European commercial epoxy compositions certified for space constructions was cured in high vacuum, plasma and ion beam and investigated. **First time** the effect of bulk modification in liquid resin under glow discharge plasma was observed and explained. **First time** the compositions, curable in space, were selected and proved suitable for space constructions. **First time** the specific geometry and composition was found to exclude foaming at curing in vacuum. **First time** the large scale construction was calculated and it was found, that with using of modern space carrier the space building can be 10,000 m³ volume, that can be delivered to Earth orbit at one launch and cured there. Published, for example, in Cosmonautics and rockets, 2009(3(56))182; Journal of spacecraft and rockets, 2011(48(2))378; Proceedings of the 9th International Symposium on Materials in a Space Environment, Noordwijk, The Netherlands, 16-20 June, 2003, ESA SP-540, pp.75-80; Advances in Space Research, 2004 (34/7)1585; European Polymer Journal. 2004 (40/8)1915; Advances in space research, 2006(37)109; Kondyurin, Curing of composite materials for an inflatable construction on the Moon, in **book "Moon"**, Springer, 2012; +other publications.

23. Space Environmental Effects on the Polymerisation of Composite Structures

Supported by European Space Agency, ESTEC. April 2003 to March 2004

My role: Principal Investigator.

The experiments on influence of space factors on curing process were proceeded. The critical space factors were found and shown, that the compositions of ESA can be used for the curing in space. Published in ESA report, Contract Nr.17083/03/NL/Sfe.

24. Polymerisation of composite structures in free space environment

Supported by ESA. January 2004 to March 2005

My role was an author and coordinator of the joint European project of 12 participants from 6 countries, including industry partners such as HTS GmbH, Space Alcatel, EADS, HTS AG, Astrocourier Ltd.

A number of projects on polymerisation of composite materials for inflatable space constructions under ESA support were prepared: HTS GmbH, EADS SPACE Transportation, Alenia Spazio, Inasmet, Aero Sekur "Polymerisation of Composite Structures in Free-Space Conditions"; HTS GmbH, HTS AG, MCB Consultants, IPF, Fraunhofer IZFP, "Ultra-light structures"; Inasmet, HTS GmbH. "Alternative rigidisation method for inflatable structures".

25. Plasma immersion ion implantation (PIII) of polymer materials and attachment of proteins

Supported by ARC (Australia) and industry. From September 2005 to present
My role: co-investigator.

The attachment of different protein on PIII treated polymers were shown and proved with different experimental methods. It was proved, that the attachment is provided by covalent bond between protein and free radicals of PIII treated polymer. **First time** it was shown, that the conformation of covalently attached protein remains active. We found, that the plasma polymerisation of carbon rich precursor gives free radical active surface for protein attachment like PIII treatment. The blocker of covalent attachment were found and explained. **First time** the explanation of surface energy of polymer treated by plasma and ion beam was done based on free radicals presence and the decay of free radicals was connected with decay of the surface energy (wettability). **First time** the covalent attachment of DNA of PIII treated polymer surface was observed and explained. Patented. Published in Proceedings of National Academy of Science, 2011(108/35)14405; Nature Biotechnology, 2010(28/10)1123; J. Mater. Chem.2011(21)17832; Langmuir 2007(23)2741; + some others.

26. Modelling of structure formation process of a polymeric material

Supported by RFBR. From January 2005 to present

My role: co-investigator.

The fundamental thermodynamic equations for calculation of non-linear visco-elastic and elastic-plastic multicomponent compounds which are transforming from liquid to solid state were developed. The theoretical approach was applied to model of experimental conditions to exclude bubbling in epoxy matrix cured under high vacuum of free space environment for creation of large size space constructions. Published in Nanomechanics science and

technology: An international journal, 2011(2/2)167; Journal on Composite Mechanics and Design, 2010(16/4)597 and 2009(15/4)512.

27. Chemistry of Polymer Materials in the Stratosphere

Supported by NASA. From January 2008 to present

My role: Principal Investigator.

First time uncured epoxy compositions were exposed in stratosphere (40 km) above ozone layer and investigated. The stratospheric flight experiment was realised in March - May 2010. **First time** it was shown, that some selected compositions are curable after stratosphere. **First time** polyethylene films were exposed in stratosphere and the effect of cosmic rays on polyethylene structure was observed. Report has been published in arXiv:1008.5236v1 [physics.chem-ph].

Significance of my projects is highlighted by worldwide news agencies: **Wired Science, USA; Aijon Journal, USA; Florida SpaceReport, USA, The Sun-Herald, Australia.**

PUBLICATIONS: JOURNAL ARTICLES/PATENTS/BOOKS

Books:

1. A. **Kondyurin**, Curing of Construction Composite Materials on Asteroids, in “Asteroids. Prospective Energy and Material Resources”, Springer-Verlag, Berlin, 2013, p. 379-403.
2. A. **Kondyurin**, Curing of composite materials for an inflatable construction on the Moon, in “Moon. Prospective Energy and Material Resources”, Springer-Verlag, Berlin, 2012, p. 503-518.
3. “Materials and coatings for medical devices: Cardiovascular”, Database, ASM International, Materials Park, Ohio 44073-0002, USA, 2009.
4. A. **Kondyurin**, M. Bilek, Ion Beam Treatment of Polymers. Application aspects from medicine to space, Elsevier, Oxford, 2008.
5. Kozulin A.T., Klyachkin Yu.S., **Kondyurin** A.V., Vibrational spectra and intermolecular interactions. Phenomenological method of intermolecular force constant calculation, Ekaterinburg, Russian Academy of Science, 1999, 202 pp.

Patents:

1. Bilek M., McKenzie D., Nosworthy N., **Kondyurin** A., Activated polymers binding biological molecules, WO 2007104107 (A1), Australian Patent Application Number 2007225021 (PCT/AU2007/000321), 2009.
2. **Kondyurin** A., Maitz M.F., Surface Modification of ePTFE and Implants using the same, US patent WO 2007/022174 A3, 2007.
3. Weber J., Atanasoska L., **Kondyurin** A., Medical Balloons and methods of making the same, US patent, Attorney Docket No: 10527-707001 05-01504, 2006.
4. Weber J., Atanasoska L., **Kondyurin** A., Bioerodible Endoprostheses and methods of making the same, US patent, Attorney Docket No: 10527-730001 05-01568, 2006.
5. Begishev V.P., Guenzel R., Maitz M., **Kondyurin** A.V., Kondyurina I.V., Romanova V.A., Pham M., Method of preparation of drug release material, Patent RU 2223793 C1, 2002.

Publications in peer reviewed scientific journals:

1. E. Kosobrodova, A. Mohamed, Y. Su, A. Kondyurin, C.G. dos Remedios, D.R. McKenzie, M.M.M. Bilek, Cluster of differentiation antibody microarrays on plasma immersion ion implanted polycarbonate, Materials Science and Engineering: C, 35, 434-440, 2014.
2. N.J. Nosworthy, A. Kondyurin, M.M.M. Bilek, D.R. McKenzie, Ion implantation treatment of beads for covalent binding of molecules: Application to bioethanol production using thermophilic beta-glucosidase, Enzyme and Microbial Technology 54, 20–24, 2014.
3. M.A. Hiob, S.G. Wise, A. **Kondyurin**, A. Waterhouse, M.M. Bilek, M.K.C. Ng, A.S. Weiss, The use of plasma-activated covalent attachment of early domains of tropoelastin to enhance vascular compatibility of surfaces, Biomaterials, 34(31), 7584–7591, 2013.
4. S.L. Hirsh, M.M.M. Bilek, D.V. Bax, A. Kondyurin, E. Kosobrodova, K. Tsoutas, C.T.H. Tran, A. Waterhouse, Y. Yin, N.J. Nosworthy, D.R. McKenzie, C.G. dos Remedios, M.K.C. Ng, A.S. Weiss, Ion implanted, radical-rich surfaces for the

rapid covalent immobilization of active biomolecules, AIP Conference Proceedings 2013, 1525, 364-369.

5. C.T.H. Tran, N.J. Nosworthy, A. **Kondyurin**, D.R. McKenzie, M.M.M. Bilek, CelB and b-glucosidase immobilization for carboxymethyl cellulose hydrolysis, RSC Advances, 2013, 3, 23604-23611.
6. A. **Kondyurin**, I. Kondyurina, M. Bilek, With reference to article:" Impact of the first-generation drug-eluting stent implantation on periprocedural myocardial injury in patients with stable angina pectoris". Dewetting problem., Journal of Cardiology 62, 265–266, 2013.
7. Y. Yu, A. **Kondyurin**, M. Bilek, M. Ng, Improving Coronary Stent Biocompatibility with Plasma Deposited High Nitrogen Polymer Coating, Heart, Lung and Circulation, Volume 22, Supplement 1 , Pages S204-S205, 2013.
8. A. **Kondyurin**, I. Kondyurina, M. Bilek, Radiation damage of polyethylene exposed in the stratosphere at an altitude of 40 km, Polymer Degradation and Stability, 98 (8), 1526–1536, 2013.
9. G. Wang, Z. Lu, X. Zhao, A. **Kondyurin**, H. Zreiqat, Ordered HAp nanoarchitecture formed on HAp–TCP bioceramics by “nanocarving” and mineralization deposition and its potential use for guiding cell behaviors, J. Mater. Chem. B, 1, 2455-2462, 2013.
10. E. Kosobrodova, A. **Kondyurin**, D.R. McKenzie, M.M.M. Bilek, Kinetics of post-treatment structural transformations of nitrogen plasma ion immersion implanted polystyrene, Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, 304, 57–66, 2013.
11. Z.J. Han, A.E. Rider, M. Ishaq, S. Kumar, A. **Kondyurin**, M.M.M. Bilek, I. Levchenko, K. Ken Ostrikov, Carbon nanostructures for hard tissue engineering, RSC Advanced, 3, 11058-11072, 2013.
12. C.T.H. Tran, A. **Kondyurin**, W. Chrzanowski, M.M.M. Bilek, D.R. McKenzie, Influence of pH on yeast immobilization on polystyrene surfaces modified by energetic ion bombardment, Colloids and Surfaces B: Biointerfaces 104, 145–152, 2013.
13. A.V. **Kondyurin**, P. Naseri, J.M.R. Tilley, N.J. Nosworthy, M.M.M. Bilek, D.R. McKenzie, Mechanisms for Covalent Immobilization of Horseradish Peroxidase on Ion-Beam-Treated Polyethylene, Scientifica, Volume 2012, Article ID 126170, 28 pages, <http://dx.doi.org/10.6064/2012/126170>, 2012.
14. G. Wang, Z. Lu, K.Y. Xie, W.Y. Lu, S.I. Roohani-Esfahani, A. **Kondyurin**, H. Zreiqat, A facile method to in situ formation of hydroxyapatite single crystal architecture for enhanced osteoblast adhesion, *J. Mater. Chem.*, 22, 19081–19087, 2012.
15. S.G. Wise, A. Waterhouse, A. **Kondyurin**, M.M. Bilek, A.S. Weiss, Plasma-based biofunctionalization of vascular implants, *Nanomedicine*, Vol. 7, No. 12 , Pages 1907-1916, 2012.
16. D.V. Bax, R.S. Tipa, A. **Kondyurin**, M.J. Higgins, K. Tsoutas, A. Gelmi, G.G. Wallace, D.R. McKenzie, A.S. Weiss, M.M.M. Bilek, Cell patterning via linker-free protein functionalization of an organic conducting polymer (polypyrrole) electrode, *Acta Biomaterialia* 8, 2538–2548, 2012.
17. C.T.H. Tran, A. **Kondyurin**, S.L. Hirsh, D.R. McKenzie, M.M.M. Bilek, Ion-implanted polytetrafluoroethylene enhances *Saccharomyces cerevisiae* biofilm formation for improved immobilization, *Journal of Royal Society, Interface*, 9, 2923–2935, 2012.

18. E.A. Kosobrodova, A.V. **Kondyurin**, K. Fisher, W. Moeller, D.R. McKenzie, M.M.M. Bilek, Free radical kinetics in a plasma immersion ion implanted polystyrene: Theory and experiment, *Nuclear Instruments and Methods in Physics Research B* 280, 26–35, 2012.
19. W. Chrzanowski, A. **Kondyurin**, J. H. Lee, M.S. Lord, M. M. M. Bilek, H.-W. Kim, Biointerface: protein enhanced stem cells binding to implant surface, *J Mater Sci: Mater Med*, DOI 10.1007/s10856-012-4687-2, 2012.
20. A. **Kondyurin**, L.A. Komar, A.L. Svistkov, Combinatory model of curing process in epoxy composite, *Composites, part B*, 43, 616–620, 2012.
21. M.M.M. Bilek, D.V. Bax, A. **Kondyurin**, Y. Yin, N.J. Nosworthy, K. Fisher, A. Waterhouse, A.S. Weiss, C.G. dos Remedios, D.R. McKenzie, Free radical functionalization of surfaces to prevent adverse responses to biomedical devices, *Proceedings of National Academy of Science*, vol. 108, no. 35, 14405–14410, 2011.
22. A. **Kondyurin**, N.J. Nosworthy, M.M.M. Bilek, Effect of Low Molecular Weight Additives on Immobilization Strength, Activity, and Conformation of Protein Immobilized on PVC and UHMWPE, *Langmuir* 2011, 27, 6138–6148.
23. A.V. **Kondyurin**, L.A. Komar, L.A. Svistkov, Modeling of the kinetics of the curing reaction of the epoxy binder-based composite material, *Nanomechanics science and technology: An international journal*, vol.2, issue 2, 167-183, 2011.
24. S. L. Hirsh, N. J. Nosworthy, A. **Kondyurin**, C. G. dos Remedios, D. R. McKenzie and M. M. M. Bilek, Linker-free covalent thermophilic β -glucosidase functionalized polymeric surfaces, *J. Mater. Chem.*, 21, 17832-17841, 2011.
25. D. Muller, D.A. Ivanov, L. Vidal, L. Simon, A. **Kondyurin**, V.A. Luchnikov, Electrically conductive hexagonally ordered nanoporous membranes produced by ion-beam induced carbonization of block-copolymer precursors, *Nanotechnology*, v.22, No.30, p.305603 (7pp), 2011.
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PRESENTED LECTURES ON CONFERENCES

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4. A. Kondyurin, Direct polymerization processes in free space environment, 11th European Conference on Spacecraft Structures, Materials & Mechanical testing, Toulouse, France, 2009.
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11. .Kondyurin, B.Lauke, Polymerisation Processes in Composite Materials Under Free Space Conditions, 2nd European Workshop “Inflatable Space Structures”, Hotel Torre S. Angelo, Tivoli, Italy, 2004.
12. Kondyurin A., Richter E., Guenzel R., Ion Beam Treatment of Polymers, European Vacuum Congress, Berlin, Germany, 2003.
13. Kondyurin A., Lauke B., Polymerisation processes in simulated free space conditions, Materials in a Space Environment, Noordwijk, The Netherlands, 2003.

14. Kondyurin A., Pulse Ion Beam Treatment of Polymers, Conference of Berlin-Brandenburgischer Verband für Polymerforschung (BVP) „Polydays 2002“, Berlin, 2002.
15. Kondyurin A., FTIR and Raman spectra of epoxy composites cured in simulated free space conditions, XXVI European Congress on Molecular Spectroscopy „EUCMOS XXVI“, Université des Sciences et Technologies de Lille, Villeneuve d'Ascq, France, 2002.
16. Kondyurin A., High-size space laboratory for biological orbit experiments, 33rd Scientific Assembly of COSPAR, Warsaw, Poland, 2000.
17. Valeev N.S., Kondyurin A.V., Influence of UV treatment of protecting-jointing coating based on hydrocarbon rubbers on structure and adhesion ability, International conference on physics-chemistry of polymers “Oligomers”, Perm 2000.
18. Kondyurin A.V., Khaibullin R.I., Gavrilov N.V., Popok V.N., Pulse and continuous ion beam modification of polyethylene, conference “Physical-chemical basis of ion implantation”, Nizhnii Novgorod, 2000.
19. Klyachkin Yu.S., Briskman V.A., Kondyurin A.V., Polymerisation of composite materials under free space conditions, Winter school on continuous media mechanics, Perm, 1999.
20. Kondyurin A., G.Mesyats, Yu.Klyachkin, Creation of High-Size Space Station by Polymerisation of Composite Materials in Free Space, Joint 1st Pan-Pacific Basin Workshop and 4th Japan-China Workshop on Microgravity Sciences, Tokyo, Japan, 1998.
21. Kondyurin A.V., Gavrilov N.V., Klyachkin Yu.S., Adhesion of PTFE modified by high current ion beams, conference “Scientifically sounded polymers and double technologies of technical chemistry”, Perm, 1997.
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23. Trushnikov V.A., Kondyurin A.V., Influence of UV treatment of substrate surface on interface interaction in polymer-polymer joints by IR ATR data, conference on spectroscopy of condensed matter, Ulyanovsk, 1989.
24. Mikov S.N., Kondyurin A.V., Trushnikov V.A., Investigation of reaction ability of polymer composite materials, conference “Modification of polymer materials in industrial processes and modification of polymer devices”, Izhevsk, 1988.
25. Kondyurin A.V., Khlopkov A.N., Korotaeva I.V., Orlov V.I., Investigation of $SbCl_3$ complexes with aromatic hydrocarbons, conference “Organic substances in inorganic analysis”, Perm 1987.
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INVITED TALKS

27. A.Kondyurin, Polymerisation processes in free space environment, Technische Universitaet Dresden, Institut fuer Leichtbau und Kunststofftechnik, Germany, 2010.

28. A.Kondyurin, Plasma immersion ion implantation of polymer. Examples for PS and PMMA, Institute of Polymer Research, Dresden, Germany, 2010.
29. A.Kondyurin, To direct polymerisation process in free space environment, HTS GmbH, Germany, 2010.
30. A.Kondyurin, Polymerisation process in free space environment, Institute of Lightweight Structures Aerospace Department, Faculty of Mechanical Engineering, Technische Universitaet Muenchen, Germany, 2010.
31. A.Kondyurin, Ion beam treatment of polymers, Charles University, Prague, Czech Republic, 2008.
32. A.Kondyurin, Ion beam treatment of polymers, Institut de Chimie des surfaces et Interfaces, Mulhouse, France, 2008.
33. A.Kondyurin, Ion Beam Treatment of Polymers, University of Sydney, Australia, 2005.
34. A.Kondyurin, Polymerisation processes in free space environment, Chinese Academy of Sciences, Beijing, China, 2005.
35. A.Kondyurin, Ion beam treatment of polymer, Boston Scientific branch in Minneapolis and Boston HQ, USA, 2005.
36. A.Kondyurin, Polymerisation of composite material in space environment for antenna, solar sail, shield and large-size frame of industrial and scientific applications, EADS Space Transportation, Saint-Medard en Jalles, Bordeaux, France, 2004.
37. A.Kondyurin, Polymerisation of composite materials under free space conditions, National Council of Research, Institute of Crystallography, Rome, Italy, 2004.
38. A.Kondyurin, Space Environmental Effects on the Polymerisation of Composite Structures, ESTEC, European Space Agency, Noordwijk, Netherlands, 2003.
39. A.Kondyurin, Polymerisation of epoxy composite material in the free space condition, HQ of Alexander von Humboldt Foundation, Bonn, Germany, 2002.
40. A.Kondyurin, Vibrational spectroscopy of intermolecular interactions, Institute of Analytical Chemistry, Technical University of Dresden, Germany, 1999.

CONFERENCE POSTER PRESENTATIONS

41. A.Kondyurin, I.Kondyurina, M.Bilek, Composite materials with uncured epoxy matrix exposed in stratosphere during NASA balloon flight, COSPAR 2012, 39th scientific assembly of the committee on space research, Bremen, Germany, 2012.
42. Chrzanowski W., Kondyurin A., Rohanizadeh R., Bilek M.M.M., Protein Biding to Biomaterials Through the Formation of Ion Beam Implanted Nano Scale Coatings – Towards Bioactive Layers. International Conference on Materials for Advanced Technology, Singapore, 2011.
43. O.Shcherbakova, K.Kostarev, A.Kondyurin, Hydrogel polymerization in microgravity for contact lenses, COSPAR 2010, 38th scientific assembly of the committee on space research, Bremen, Germany, 2010.

44. Komar L. A., Svistkov A. L., Kondurin A. V., Modelling of curing of epoxy in free space conditions, XXXV Summer school "Advanced problems in mechanics", St. Petersburg (Repino), 2007.
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47. Pecheva E., Pramatarova L., Maitz M.F., Pham M.T., Kondyurin A., Morphological, composition and structure study of hydroxyapatite layers deposited on solid substrate from simulated body fluid, European Vacuum Congress, Berlin, Germany, 2003.
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49. Pecheva E., Pramatarova L., Petrov T., Pramatarova R., Kondyurin A., Ion beam modified surfaces as substrates for Hydroxyapatite growth induced by laser-liquid-solid interaction, conference Laser and Laser-Informational Technologies: Fundamental Problems and Applications (ILLA '2003), Smolyan, Bulgaria, 2003.
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55. Pecheva E., L. Pramatarova, M. F. Maitz, M. T. Pham, A. Kondyurin, R. Pramatarova, Analysis of hydroxyapatite films grown on whole-surface ion implanted substrates for studying the process of biomineralization, Fifth Workshop on nanoscience and nanotechnology, November 17 - 18, 2003, Sofia, Bulgaria and satellite second meeting of Cosent partners, November 19 -22, 2003, Istanbul, Turkey.
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57. Kondyurin A., Ya. Sadikov, Time depended FTIR spectra of mineral water after contact with air, XXVI European Congress on Molecular Spectroscopy „EUCMOS XXVI“, Université des Sciences et Technologies de Lille, Villeneuve d'Ascq, France, 2002.
58. Kondyurin A., Rautenberg C., Habicher W.D., Steiner G., Salzer R., FTIR spectra of hydroxyl containing calix[4]resorcinearene, Abstract, The First International Conference on Advanced Vibrational Spectroscopy ICAVS-1, Turku, Finland, 2001.
59. Kondyurin A., Briskman V., Kondyurina I., Simulation of Large Frame Creation by the Way of Polymerization of Composite Polymer Material on Mars Surface, Pan Pacific Basin Workshop on Microgravity Sciences, Pasadena, USA, 2001.
60. Osorgina I.V., Kondyurin A.V., Plaksin S., Polyurethane prosthetics with carbon coating, conference “Modern methods for effective stitches materials and polymer implants”, Moscow, 2001.
61. Osin, Yu.N., Khaibullin R.I., Stepanov A.L., Khaibullin I.B., Kondyurin A.V., Structure and optical properties of silver films synthesised in siloxane polymers by ion implantation method, Russian conference on electron microscopy, Chernogolovka, 2000.
62. Romanova V.A., Begishev V.P., Kondyurin A.V., Formation of segmented polyurethane films from solution, International conference on physics-chemistry of polymers “Oligomers”, Perm 2000.
63. Yakushev R.M., Khannanova E.G., Kondyurin A.V., Lisenko S.N., Tereshatova E.N., Investigation of structure formation in crosslinked polyurethanes, International conference on physics-chemistry of polymers “Oligomers”, Perm 2000.
64. Fedoseev M.S., Surkov V.D., Demin A.V., Gorbunova M.N., Anisimova E.V., Kondyurin A.V., Investigation of co-polymerisation of vinylsiloxanes with polyolefines and vinyl monomers, International conference on physics-chemistry of polymers “Oligomers”, Perm 2000.
65. Kondyurin A., Salzer R., Stainer G., Rautenberg C., Vibrational Spectra of Calix(4)resorcinearene Isomers, 23rd European Congress on Molecular Spectroscopy, Coimbra, Portugal, 2000.
66. Budnikov V.I., Kondyurin A.V., Malinovski A.V., Fedchenko V.N., Dose system of liquid components in biotechnological processes, conference “Polymer materials and double technologies of technical chemistry”, Perm, 1999.
67. Imankulova S.A., Kondyurin A.V., Klyachkin Yu.S., Formation of adhesion joint of nitrilic rubber and epoxy adhesive, conference “Polymer materials and double technologies of technical chemistry”, Perm, 1999.
68. Osorgina I.V., Begishev V.P., Kondyurina I.V., Kondyurin A.V., Polyurethanes for endoprosthetics, conference “Polymer materials and double technologies of technical chemistry”, Perm, 1999.
69. Pogorelova E.N., Kondyurin A.V., Utilisation of polyurethanes by thermoglycolis method, conference “Polymer materials and double technologies of technical chemistry”, Perm, 1999.
70. Kondyurin A., Mesyats G., Klyachkin Yu., Briksman V., Kovrov V., Selivanov E., Nechitailo G.S., Mashinsky A.L., Epoxy plastic polymerization in free space. Conference on space science, Denver, Colorado, USA, July 12-15, 1999.

71. Begishev V., N. Gavrilov, G. Mesyats, Yu. Klyachkin, I. Kondyurina, A. Kondyurin, I. Osorgina, Modification of polyurethane endoprosthetics surface by pulse ion beam, International conference on high - power particles beams "Beams'98", Haifa, Israel, June 7-12, 1998.
72. Gavrilov N., R.Stinnett, R.Buchheit, V.Mizgulin, V.Nasonov, A.Kondyurin, Modification of polymer films by pulsed ion beams, 11th International Pulse Power conference, June 29 - July 2, 1997, Baltimore, USA.
73. Klyachkin Yu., E.Tereshatova, A.Kondyurin, IR and Raman spectra of some Polyurethanes, 40th Hungarian conference on spectrochemistry, Debrecen, Hungary, 1997.
74. Budnikov V.I., Kondyurin A.V., Fedchenko V.N., Chizh V.G., Investigation of concentrated solutions of acrylamide, made by biotechnological method, by IR spectra, conference "Scientifically sounded polymers and double technologies of technical chemistry", Perm, 1997.
75. Klyachkin Yu., A.Kondyurin, E.Tereshatova, D.Yakusheva, Structure of polymer surface after pulse ion beam treatment, International conference BEAMS'96. Prague, 1996.
76. Klyachkin Yu., A.Kondyurin, Ion beam treatment of PE and PTFE and their adhesion abilities, International conference BEAMS'96. Prague, 1996.
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78. Klyachkin Yu.S., Kondyurin A.V., Ion beam treatment of polymer materials, All-Union conference on modification of construction materials by charged particles beams, Tomsk, 1996.
79. Klyachkin Yu.S., Kondyurin A.V., FTIR ATR spectra of polymer surface after ion beam treatment, 10th International conference of Fourier transform spectroscopy, Budapest, Hungary, 1995.
80. Shkrabo D.N., Kondyurin A.V., Intermolecular vibrations of water molecule in crystalline hydrates, 10th International conference of Fourier transform spectroscopy, Budapest, Hungary, 1995.
81. Mesyats G.A., Klyachkin Yu.S., Gavrilov N.V., Mizgulin V.N., Yakushev R.M., Kondyurin A.V., Treatment of low density polyethylene by nitrogen ion beam, conference "Modification of construction materials by beams of charged particles", Tomsk, 1994.
82. Kondyurin A.V., Force constant of Hydrogen Bonding in some carboxylic acids by IR and Raman spectra, 6th Austrian - Hungarian International conference on Vibrational Spectroscopy, Abstracts, 1994, Vespem, Hungary.
83. Klyachkin Yu.S., Yakushev R.M., Kondyurin A.V., Interface interaction in adhesion joint of EPDM-40 rubber and active adhesive by IR ATR, Austrian - Hungarian International conference on Vibrational Spectroscopy, Abstracts, 1994, Vespem, Hungary.
84. Trushnikov V.A., Kondyurin A.V., Vibrational spectra of some diisocyanates in liquid state and on EPDM rubber surface, All-Union conference on theoretical organic chemistry, Volgograd, 1991.
85. Basil S.N., Kondyurin A.V., Trushnikov V.A., Modification of EPDM-40 rubber for increase of adhesion interaction, conference on Application of physical and mathematical methods in investigation of matter, Vladivostok, 1990.

86. Kondyurin A.V., Khlopkov A.N., Mikov S.N., Investigation of dynamic of SbCl_3 complexes with some aromatic hydrocarbons by Raman spectra, conference on Application of physical and mathematical methods in investigation of matter, Vladivostok, 1990.
87. Belousova S.L., Belousova N.K., Kondyurin A.V., Beloglazov G.S., Mikov S.N., Application of modified Hook-Jeevs method and non-linear Newton for IR spectra deconvolution at investigation of polymerisation kinetics of polyurethanes, conference on Application of physical and mathematical methods in investigation of matter, Vladivostok, 1990.
88. Kondyurin A.V., Application of Raman Spectroscopy for Studying the Intermolecular Interaction in Molecular Crystals, Austrian - Hungarian International conference on Vibrational Spectroscopy, 1990, Vespem, Hungary.
89. Klyachkin Yu.S., Trushnikov V.A., Kondyurin A.V., Imankulova S.A., Application of IR MATR spectroscopy for studying the adhesion of polymer materials, Austrian - Hungarian International conference on Vibrational Spectroscopy, 1990, Vespem, Hungary.
90. Beloglazov G.S., Mikov S.N., Belousova N.K., Ginatullin S.N., Kondyurin A.V., Comparison of computer methods of IR spectra deconvolution for polymerisation kinetic of urethanes, conference "Investigation of young scientists in physical-mathematical fields", Perm 1988.
91. Kondyurin A.V., Gavrilov N.I., Investigation of adhesion joint based on nitrilic rubbers by IR ATR method, conference "Investigation of young scientists in physical-mathematical fields", Perm 1988.
92. Kondyurin A.V., Orlov V.I., Mikov S.N., Investigation of SbCl_3 dyphenylamine complex molecule dynamic, conference "Investigation of young scientists in physical-mathematical fields", Perm 1988.
93. Trushnikov V.A., Kondyurin A.V., Classification of treatment methods of polymer surface for adhesion joints, conference on modification of polymer materials in industrial processes and modification of polymer devices, Izhevsk, 1988.
94. Mikov S.N., Kondyurin A.V., Trushnikov V.A., Investigation of reaction ability of polymer composite materials, conference on Modification of polymer materials in industrial processes and modification of polymer devices, Izhevsk, 1988.
95. Kondyurin A.V., Khlopkov A.N., Korotaeva I.V., Orlov V.I., Investigation of SbCl_3 complexes with aromatic hydrocarbons, conference on organic substances in inorganic analysis, Perm 1987.
96. Karmanov V.I., Kondyurin A.V., Kozulin A.T., To question of integral intensity of IR spectra, conference on Organic substances in inorganic analysis, Perm 1987.
97. Sdobnov V.N., Kondyurin A.V., IR and Raman spectra of some polymers, conference on organic substances in inorganic analysis, Perm 1987.
98. Trushnikov V.A., Kondyurin A.V., Imankulova S.A., Investigation of the nature of adhesion interaction in multicomponent polymer systems by FTIR ATR, conference on organic substances in inorganic analysis, Perm 1987.
99. Karmanov V.I., Mikov S.N., Hlopkov A.N., Kondyurin A.V., Kozulin A.T., Dependence of force coefficient on kinematics parameters in trihalogenic of fifth group, 7th regional conference on Physical-chemical methods of analysis and investigations in industry, Tula 1986.

100. Karmanov V.I., Muravyev G.A., Kondyurin A.V., Kozulin A.T., Hydrogen bond in Raman spectra of some carbon acids and polymers, 3rd all-Union conference on Raman Spectroscopy, Dushanbe 1986.
101. Kondyurin A.V., Using of asymmetry parameter of electric field tensor for spectra calculation, conference „Actual problems of physical-chemical sciences in investigations of young scientists“, Perm, 1986.
102. Kondyurin A.V., Raman spectra of two molecular complex of antimony trichloride with diphenyl, 14th Perm conference on Spectroscopy of condensed matter, Perm 1985.
103. Kondyurin A.V., Study of molecular dynamic crystal by method of Raman spectra, Student conference, Perm State University, Perm, 1984.
104. Mikov S.N., Hlopkov A.N., Kondyurin A.V., Kozulin A.T., Raman spectra of complex of antimony trichloride with p-xylene and diphenyl, Conference on Spectroscopy of liquid and crystals, Kemerovo State University, Kemerovo, 1984.

Teaching

LECTURER

My career in teaching has been started when I was a student of 5th year in University (1983-1984), I worked as lecture demonstrator in physics auditorium.

Between 1984-1988 I was employed by the Physics Faculty in Perm State University, on a fractional appointment as an Lecturer. My duties in this role required me to teach the entire 2nd year physics course for students of Physical, Chemical and Biological Faculties. That included lectures and laboratory each week for the entire academic teaching year. For the lectures and laboratory I was required to teach the optics as part of general physics course.

UNDERGRADUATE RESEARCH PROJECT/TAUGHT POSTGRADUATE STUDENTS

I have co-supervised a number of students in cooperation with Prof. A. Kozulin, Prof.Yu.Klyachkin and Prof.M.Bilek.

Masters Theses

Mr. Q. Latour (2010), Ms. J. Tiley (2009), Ms. S. Graham (2009), Ms. M. Vozzo (2009), Mr. A. Reising (2007), Ms. H. M. Smith (2007), Mr. C. Swan (2007), Mr.N.Gavrilov (1987), Ms.V.Orlov (1986).

Ms. J. Tiley, M.Eng student studying Materials Science at Trinity College, Oxford has been awarded the prestigious award for **Morgan Crucible Award** for Best Student in Materials Science, 2009.

Honours Theses

Ms. P. Naseri (2008), Ms.M.Bagara (1999), Ms.I.Musura (1991), Ms.L.Sazhina (1990).

Ms.M.Bagara, Perm State University, has been awarded for **Best Student** in chemistry, 1999.

PhD students

1. Dr. S. Hirsh.
2. Ms. T. Tran, continues.
3. Mr. K. Tsoutas, *continues*.
4. Dr.E.Kosobrodova, *continues*.
5. Dr. S.K. Lim.
6. Dr. R. Tipa.

Administration, training and awards

1. **Plasma laboratory, School of Physics, University of Sydney, Sept 2005 – current**

Duties and responsibilities: To manage the Helicon PIII, spincoater, FTIR, XPS, contact angle and ellipsometry equipment, polymer sample preparation, chemical laboratory. Responsibilities include ensuring appropriate booking, usage maintenance, external service of these equipment and OH&S assessments occur for these facilities; training of internal and external users of the facilities.
2. **Contract manager, School of Physics, University of Sydney, 2006 – 2007**

Duties and responsibilities: to manage the contract with Boston Scientific, planning, financing, reporting and staff management.
3. **COSPAR Scientific Assembly (Committee of Space Research under United Nation patronage), Deputy Organizer of session F4.4 “Influence of space flight environment on biological systems”, 2000 – Current.**

Duties and responsibilities: Planning and coordination of the session, acceptance of the presentations, planning of the session program, planning financial activity, leading of the session activity during COSPAR Meetings.
4. **Society of Plastic Engineers (SPE), NSW team member, 2011 – Current.**

Duties and responsibilities: Assist the president of Australian Branch SPE in managing activity within the SPE, schedule SPE meetings and compile minutes of group meetings, and other tasks as directed by the SPE head.
5. **Advisory Board, Member of advisory board of Open Aerospace Engineering Journal, 2007 – Current.**

Duties and responsibilities: Editing and reviewing of the manuscripts.
6. **Project manager, Institute of Polymer Research, 2003 –2005.**

Duties and responsibilities: to manage the projects with European Space Agency, planning, financing, reporting and coordination of participants.
7. **Project manager, Institute of Technical chemistry, 1988-2001.**

Duties and responsibilities: to manage the projects with Sandia laboratories, Los Alamos Nuclear Center, RFBR and industry, planning, financing, reporting and coordination of investigation, staff management.