Head Assist. Prof. George Rossenov Ivanov, Ph.D.

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PERSONAL DATA

Nationality	Bulgarian
Date and place of birth	30 May 1962, Sofia, capital of Bulgaria

PERSONAL SKILLS AND COMPETENCES

Resume

25 years of work in Universities or Academy of Science institute combined with 18 years of running own high tech company in parallel. Significant experience in developing and managing both scientific and instrument engineering projects. One of the best experimental physicists in BG with very wide range of methods used, working on the junction of physics, chemistry and biology. Very quickly learns new methods and instruments. Can get the most of an instrument due to his engineering knowledge how it works. Key areas of research – materials research, nanotechnology, biomembranes. Total of 22 papers incl. 1 patent and 1 book chapter. Expert in developing complex research instrumentation. Four different types of instruments were developed in several versions and modifications. Two research setup automation projects. Excellent leadership and team skills, outstanding skills as system engineer, experience in product marketing on the international markets, experience in risk management and project control, fast learner, creative and innovative problem solving, serious analytical skills, education and work experience in multicultural environment (Europe, USA, Japan, Russia).

RESEARCH EXPERIENCE

Key areas
Research methods used

Ultra thin organized organic films - Langmuir-Blodgett (LB) method – application and instrumentation development, surface tension measurements, phospholipids, fluorescent labels, nanoparticle incorporation in thin films, nanothin films, Self assembly, Biological and chemical sensors, 3D nanomaterials (aerogels), Scanning Probe Microscopy (SPM) – 7 methods used, application and methods development, Electrical Impedance Spectroscopy (EIS) – application and instrument development, Photo cells based on nanomaterials, patch-clamp method for cell and biomembrane research. Most of the optical microscopy methods incl. fluorescence microscopy at the air-water interface; UV-VIS-FTIR absorption and polarized spectroscopy; small-angle X-ray diffraction, fluorescence kinetics, Fluorescence Lifetime Imaging Microscopy (FLIM), Quartz crystal microbalance measurements, elipsometry, Brewster Angle Microscopy (BAM), Nanoidentation and elasticity measurements, computer aided molecular conformational analysis at simulated air-water interface.

PROFESSIONAL EXPERIENCE

• Dates (from – to)	From February 2009 till now.
• Name and address of the employer	Department of Physics, Faculty of Hydraulic Engineering, University of Architecture, Civil Engineering and Geodesy (UACEG) www.uacg.bg/?l=2 , blvd. Hr. Smirnenski, No 1, Sofia, Bulgaria.
• Type of activity or area of work	The highest rating university in its area in Bulgaria and in neighboring countries. Lecturing and practical exercises with students. Scientific projects with students. Scientific research.
• Title	Lecturer, Head Assist. Prof., Director of the new Center for nanotechnologies in civil engineering, in the process of habilitation in 2012.
• Activities and responsibilities	Lectures on Physics, Laboratory exercises on physics in English and Bulgarian. Responsible for the preparation of a research project NanoEcoBuild about functionalized aerogels – true 3D nanostructured materials.
• Main achievements	Introduces multimedia developed lectures in physics, prepared 4 conference reports with student participation which were awarded. Two times was nominated by the students as a lecturer of the year in his faculty (2nd and 3rd place).
• Dates (from – to)	From 1994 till now
• Name and address of the employer	Advanced Technologies Ltd., Postoyanstvo str., bl. 253, entr. E, Sofia 1111, www.at-equipment.com

• Type of activity or area of work	High tech development and manufacturing micro enterprise in the area of organic nanotechnologies. Areas of activity: manufacturing of research instruments, automation, and distribution of research equipment.
• Title	Chief Executive Officer, co-owner and from 1998 - 100% owner.
• Activities and responsibilities	Responsible for the overall operations; system engineer responsible for the development of new products; develops software (LabView) for measurement and control automation; responsible for product marketing; develops funding applications projects; prepares tender documentation.
• Main achievements	4 generations of a system for ultra thin organic film deposition by the Langmuir and Blodgett method (single unit price – 20 000 €) becoming a quality market leader. First sales in Japan and South Korea 1996 – 97, negotiated Seiko Instruments (a billion $ company) as Japan's distributor, the only non-Japanese company selling this instruments in Japan. Sales of high impedance low current amplifiers (patch-clamp method for cell research) in Italy and UK, 2000 – 2001; Develops and sells Frequency Response Analyzers in Bulgaria 2002 – 2008; 2 automation projects; first sales of Atomic Force Microscopes in Bulgaria – 2007.
• Dates (from – to)	From 1.01.1988 till 31.05. 2007
• Name and address of the employer	Institute of Solid State Physics, Bulgarian Academy of Sciences, Tsarigradsco Chausee blvd. 72, www.issp.bas.bg
• Type of activity or area of work	One of the leading research institutes in the Bulgarian Academy of Sciences.
• Title	Research Fellow I deg., Ph.D.
• Activities and responsibilities	Leadership and participation in scientific projects (e.g. the No 1 project in Physics of the BG NSF for 2005); 20 scientific publications, 1 patents, 1 book chapter, with individual impact factor around 7, over 50 citations, development of scientific instrumentation.

EDUCATION

Postdoctoral Fellowship	30.05.2002 – 31.05.2003; State University of New York (SUNY) at Buffalo, Research of biomembranes and cells using the patch-clamp method.
Ph.D.	2003, Institute of Solid State Physics, "Langmuir and Langmuir-Blodgett films from fluorescently labeled phospholipids". Mentor: Academician, Prof. D.Sc. Alexander G. Petrov
Additional trainings over 1 month	TU Munich; Moscow, Acad. Sci.; Univ. Mainz; Free Univ. Brussels; Univ. Durham, UK; Tokyo Inst. Technology.
Education in management	3 months in Bulgaria; 1 month in Osaka, Japan and 45 days in Tokyo.
B.Sc. and M.Sc.	Sofia University, Faculty of Physics, engineering physics, specialization in microelectronics and semiconductor physics, graduation with honors
Secondary education	The famous English Language School in Sofia
FOREIGN LANGUAGES	Excellent knowledge of English and Russian, minimal – French.
MEMBERSHIP IN SCIENTIFIC ORGANIZATIONS	Member of the Bulgarian National Council for Nanotechnologies; Founding member and coordinator for Bulgaria, International Society for Molecular Electronics and BioComputing (IS MEBC); Included in Who is Who (Marquis, since 1899) for science and engineering in 2011 and 2012.
SOCIAL SKILLS AND COMPETENCES	Pronounced leadership skills, team work skills, excellent scientist – engineers interfacing; skills to work in different cultural environments, excellent communication skills, negotiation skills, flexibility, sense of humour. Entrepreneurial skills.
ORGANIZATIONAL SKILLS AND COMPETENCES	Organized and managed teams both in the scientific and manufacturing areas. Enterprising. Budget management. Consistency for reaching targets. Stress management.
TECHNICAL SKILLS AND COMPETENCES	Extended computer skills; Knowledge of Microsoft Office, some web site (HTML, CSS, Javascript) creation and support; software programming in LabView (programming language for experiment control and data acquisition tasks), some knowledge in electronics hardware design.

REFERENCES

1. Prof. D.Sc. Michel C. Petty, FinstP, FIET, University of Durham, UK, e-mail: m.c.petty@durham.ac.uk
2. Academician Prof. D.Sc. Alexander G. Petrov, Director, Inst. Solid State Physics, Bulg. Acad. Sci., e-mail: agpetrov@issp.bas.bg
3. Prof. D.Sc. D.Sc. Zdravko Stoynov, Director, Inst. Electrochemistry and Energy Sources, Bulg. Acad. Sci., e-mail: stoynov@bas.bg

List of Publications of Dr. George R. Ivanov

1. G. R. Ivanov and A. T. Todorov, "Langmuir-Blodgett film system with enhanced performance", *Int. youth school*, (1990), in bulgarian.
2. G.R. Ivanov, K. Ozanyan, P. Gladkov, "Time correlated single photon counting method. Application to fluorescence kinetic measurements." *Yearly book, Sofia University*, (1991).
3. G. R. Ivanov, A. T. Todorov, A. G. Petrov, "New highly precise and well defined Langmuir-Blodgett film deposition system", in *Molecular Electronics* vol. 7 (1991), ed. P.I. Lazarev, Kluwer Academic Publishers, Dordrecht, Netherlands, p. 139.
4. G. R. Ivanov, A. T. Todorov, A. G. Petrov, "Langmuir trough with enhanced performance", *Makromol. Chem., Macromol. Symp.,* 46 (1991) 377.
5. G. R. Ivanov, A. G. Petrov, "Polymorphism in Langmuir films from a fluorescently labeled phospholipid", *Mol. Cryst. Liq. Cryst.,* 215 (1992) 245.
6. K. G. Nushev, G. R. Ivanov, et. al., "Robotized system for deposition of monomolecular organic films", *Bulgarian patent* No. 47827 (1992). Document for implementation (1992).
7. G. R. Ivanov, K. G. Kostadinov, A. G. Petrov, "Aspects of Langmuir-Blodgett trough design: computerization, pressure measurement, unevenness of motion, generated vibrations", *Thin Solid Films,* 210/211 (1992) 13.
8. G. R. Ivanov, "First observation of fluorescence self-quenching in Langmuir films", *Chem. Phys. Lett.,* 193 (1992) 323.
9. P. J. Lukes, G. R. Ivanov, M. C. Petty, J. Yarwood, M. H. Greenhall, Y. Lvov, "Deposition and structural properties of Langmuir-Blodgett films from a fluorescently labeled phospholipid", *Langmuir*, 10 (1994) 1877.
10. I. I. Yovchev, B. V. Vasilev, G. R. Ivanov, "A basic Langmuir-Blodgett trough configuration", Universite de Plovdiv, *Travaux Scientifiques*, 30 (1995) 25, fasc. 4 - Physique.
11. G. R. Ivanov, J. I. Petkova, R. Brasseur, M. Fujihira, H. Takano, Y. Okabe, "Aggregation and energy transfer in Langmuir and Langmuir-Blodgett films from a fluorescently labeled phospholipid", in *Future Directions in Thin Film Science and Technology*, eds. J. M. Marshall, N. Kirov, A. Vavrek, J. M. Maud, World Scientific, Singapore, 1997, 381.
12. G. R. Ivanov, J. I. Petkova, Y. Okabe, D. Aoki, H. Takano, H. Kawate, M. Fujihira, "Scanning probe microscopy studies of aggregation in Langmuir-Blodgett films", *Supramolecular Science*, 4 (1997) 549.
13. M. Fujihira, H. Monobe, A. Koike, G. R. Ivanov, H. Muramatsu, N. Chiba, N. Yamamoto, T. Ataka, "Application of scanning near-field optical microscopy to thin organic film devices", *Ultramicroscopy*, 71 (1998) 269.
14. G. R. Ivanov and M. Fujihira, "Novel phenomena in organized organic monolayers", in *Thin Film Materials and Devices - Developments in Science and Technology*, eds. J. M. Marshall, N. Kirov, A. Vavrek, J. M. Maud, World Scientific, Singapore, 1999, 261.
15. G.R. Ivanov and M. Fujihira, "Single component Langmuir-Blodgett film investigated with 5 scanning probe microscopy methods", *Colloids and Surfaces A*, 198 - 200 (2002) 305.
16. B. K. Tuleva, G. R. Ivanov, N. E. Christova, "Biosurfactant Production by a new Pseudomonas putida Strain ", *Zeitschrift fur Naturforschung*, 57c (2002) 356.
17. T. Angelov, D. Radev, G. R. Ivanov, D. Antonov, I. Spirov, T. Ruskov, A. G. Petrov, "Hydrophobic magnetic nanoparticles: synthesis and LB film preparation", *J. Optoelec. Adv. Mat.*, 9 (2007) 424.
18. G. R. Ivanov, J. I. Burov, "Nanodimentional Aggregates in Organic Monolayers Studied with Atomic Force Microscopy (AFM) and Fluorescence Lifetime Imaging Microscopy (FLIM)", Sixth Int. Conf. Balkan Physical Union; *AIP Conf. Proc*. 899 (2007) 257.
19. G. As. Georgiev, A. G. Jordanova, G. R. Ivanov, Z. I. Lalchev, "Interaction of poloxamer F-98 with free standing phospholipid films ", *J. Optoelec. Adv. Mat*., 11 (2009) 1241.
20. G. R. Ivanov, G. As. Georgiev, Z. I. Lalchev, "Monolayers from fluorescently labelled phospholipids", *J. Optoelec. Adv. Mat*., 11 (2009) 1238.
21. G. R. Ivanov, R. Tomova, S. T. Djambova, M. Nadoliiski and D. Dimova-Malinovska "Functionalized aerogels - new nanomaterials for energy-efficient building. Preliminary AFM, Nanoidentation and EIS studies ", *J. Phys.: Conf. Ser*., 253 (2010) 012077. Full text PDF.
22. G. R. Ivanov, G. Georgiev and Z. Lalchev - Book chapter, "Fluorescently Labeled Phospholipids - New Class of Materials for Chemical Sensors for Environmental Monitoring ", in "*Relevant Perspectives in Global Environmental Change*", Julius Ibukun Agboola (Ed.), (2011) ISBN: 978-953-307-709-3, InTech. Full text PDF.