



Dr. Dhananjay Bodas

Scientist D

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Research Area

- Micro-nano fabrication technologies; biomedical microdevices; micro-nano fluidics; biosensors
- Research interest fall broadly in the area of micro fabrication technology. More specifically micro-nanofluidics and its applications in life sciences. Basic research in understanding flows at micro-nano scale using simulation as well as emulation. Application research involves using microfluidics for isolation, separation and/or detection of bio-macromolecules.

Profile

Education & Scientific Career

- Associate Professor (Jun 2008 – Dec 2009); Department of Instrumentation Science, University of Pune, Pune, India
- MEMS Consultant (May 2006 – Apr 2009); Rexcorp Nanotech, Mumbai, India
- Research Scientist (Sep 2007 – Jun 2008); bigtec Pvt. Ltd., Bangalore, India
- Visiting Research Scientist (Humboldt Research Fellow)(Jul 2006 – Aug 2007); Institute of Microsystems Technology (IMTEK), Freiburg, Germany
- Research Scientist (Mar 2006 – Jun 2006); Institute of Bioengineering and Nanotechnology (IBN), Singapore
- Post-Doctoral Fellow and Research Engineer (Dec 2004 – Feb 2006); FEMTO-ST, Dept LPMO, Besançon, France
- Short-term research scholar (Aug 2003 – Oct 2003); Georgetown University (GU), Washington DC, USA

Awards

- Alexander von Humboldt (AvH) Research Foundation Fellowship.
- Young Scientist Award from Institute of Smart Structures and Systems (ISSS) 2014.
- Post-Doctoral fellowship awarded by French Ministry of Research for the year 2004-2005.
- Senior Research Fellowship (SRF), awarded by Council of Scientific and Industrial Research (CSIR), Govt. of India during 2002-2005.

Membership of professional bodies and Editorial assignments:

- Life Member of Humboldt Academy, Pune Chapter.
- Life Member of Institute of Smart Structures and Systems (ISSS)
- Editor for Journal of Spectroscopy

Publications

- In vitro and in vivo studies of a novel bacterial cellulose-based acellular bilayer nanocomposite scaffold for the repair of osteochondral defects. Kumbhar JV, Jadhav SH, Bodas DS, Barhanpurkar-Naik A, Wani MR, Paknikar KM, Rajwade JM. *International Journal of Nanomedicine* 2017, 12: 6437-6459.
- N Ghatpande, P Apte, B Joshi, S Naik, D Bodas, V Sande, P Uttarwar and P Kulkarni, 2016 Development of a novel smartphone-based application for accurate and sensitive on-field hemoglobin measurement, *RSC Adv.* 6, 104067-104072.
- B Shravage, S Ramteke, P Kulkarni and D Bodas, 2016 A concave microwell array fabricated using the ommatidium of the common fruit fly for efficient cell culture, *RSC Adv.* 6, 64266-64270.
- V Kulkarni, D Bodas, D Dhoble, V Ghormade and K Paknikar, 2016 Radio-frequency triggered heating and drug release using doxorubicin-loaded LSMO nanoparticles for bimodal treatment of breast cancer, *Colloids and Surfaces B: Biointerfaces* 145,2016 878-890.
- N Veldurthi, P Ghoderao, S Sahare, D Bodas, A Kulkarni and T Bhave, 2016 Magnetically active micromixer assisted synthesis of drug nanocomplexes exhibiting strong bactericidal potential, *Mater. Sci. and Eng. C* 68,2016 455-464.
- S Agrawal, P Kulabhusan, M Joshi, D Bodas and K Paknikar, 2016 A high affinity phage-displayed peptide as a recognition probe for the detection of Salmonella Typhimurium, *J. Biotechnol.* 231,2016 40-45.
- AB Joshi, D Bodas, JY Rauch and SA Gangal, 2016 Effect of oxygen vacancies on crystallization and piezoelectric performance of PZT, *Ferroelectrics* 494, 117-122.
- V Kamat, D Bodas, and K Paknikar, 2016 Chitosan nanoparticles synthesis caught in action using microdroplet reactions, *Nature Scientific Reports* 6, 22260.
- V Kamat, I Marathe, D Bodas, V Ghormade and K Paknikar, 2015 Synthesis of monodisperse chitosan nanoparticles and in-situ drug loading using active microreactor, *ACS Appl. Mater. and Interface* 7, 22839-22847.
- A Garje, YG Adhav and D Bodas, 2015 Design and simulation of blocked blood vessel for early detection of heart diseases, *Proc. IEEE* 204-208.

- B Gharge, V Upadhye and D Bodas, 2015 Design and simulation of microcantilevers for detection of pathogens, Proc. IEEE 249-252.
 - V Kulkarni, D Bodas and K Paknikar, 2015 Lanthanum Strontium Manganese Oxide (LSMO) nanoparticles: a versatile platform for anticancer therapy, RSC Adv. 5, 60254.
 - P Bhagat, KR Patil, D Bodas and K Paknikar, 2015 Hydrothermal synthesis and characterization of carbon nanospheres: a mechanistic insight, RSC Adv. 5, 59491.
 - M Bute, S Shinde, D Bodas, H Foud, K Adhi and S Gosavi, 2015 Benzophenone doped polydimethylsiloxane: Self developable composite resist system for its use in direct write laser lithography application, J. Phys. D, 48, 175301.
 - N Veldurthi, S Chandel, T Bhawe and D Bodas, 2015 Computational fluid dynamic analysis of poly(dimethyl siloxane) magnetic actuator based micromixer, Sens. & Actu. B 212, 419-424.
 - N Agrawal, M Sarkar, M Chawda, V Ganesan and D Bodas, 2015 Room temperature magnetism and metal to semiconductor transition in dilute $Sb_{1-x}Se_x$ semiconducting alloy thin films, Mater. Res. Express, 2, 025902.
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Patents

- D Bodas and KM Paknikar, "Microchip based portable real time polymerase chain reactor" E1/2763/2016MUM.
- S Agrawal, KM Paknikar and D Bodas, "Polymer coated fluorescent semiconductor nanocrystals" 413/MUM/2014.
- S Agrawal, KM Paknikar and D Bodas, "Bacteriophage based microfluidic assay for bacterial detection" 414/MUM/2014.
- S Agrawal, KM Paknikar and D Bodas, "Microfluidic biosensor for the detection of pathogens" 415/MUM/2014.
- D Bodas, P Kulkarni, B Joshi, "Separation of serum by paper based microfluidics and estimation of different forms of iron using camera phone" 416/MUM/2014.
- V Kulkarni, D Bodas, KM Paknikar, "3D porous scaffolds for cell culture and tissue engineering" 417/MUM/2014.