Education

Ph.D., Physics, IIT Kanpur

M.Sc., Physics, IIT Roorkee

B.Sc., Physics and Mathematics, MJP Rohilkhand University

Academic Appointments

Assistant Professor, Biosciences & Biomedical Engineering	IIT Indore, India. (2013- Present)
Assistant Project Scientist, Physics & Astronomy	UC Riverside.
Assistant Project Scientist, Bioengineering	UC Riverside.
Academic Coordinator and Lecturer, Bioengineering	UC Riverside.
Postdoctoral Fellow, Biomedical Engineering	Tufts University
Visiting Research Associate, Biosystems	KAIST, South Korea

Awards and Honors

1- Department of Science & Technology, India and Abdus Salam International Center for Theoretical Physics, Trieste, Italy (DST-ICTP-2004) Fellowship: To attend the college on Medical Physics in Trieste, Italy.

2- Council of Scientific and Industrial Research (CSIR-2002) Travel Grant award: To present the research work at SPIE conference in San Jose, California, USA.

3- SPIE student travel grant award (2002).

Publications

Peer Reviewed Journal Publications:

1- Hunter, M.‡, Gupta, S.‡, Quinn, K. P., Kaplan, D. L. and Georgakoudi, I., "Optical characterization of hydroxyapatite growth on silk films using simulated body fluid," Submitted to Biomaterials. [‡ Equal contribution]

2- Ardekani, S., Scott, H., Gupta, S., Eum, S., Yang, X., Brunelle, A., Wilson, S., Mohideen, U., and Ghosh, K., "Nanoliposomal Nitroglycerin exerts potent anti-inflammatory effects," Accepted in Nature Scientific Reports.

3- Gui, D., Gupta, S., Xu, J., Zandi, R., Gill, S., Huang, I. C., Rao, A. L. N., and Mohideen, U., “A novel minimal in vitro system for analyzing HIV-1 Gag-mediated budding,” J. Biol. Phys., 41 (2), 135-149, 2015.

4- Gupta, S., Chatni, M. R., Rao, A. L. N., Vullev, V., Wang, L. V., and Anvari, B., “Virus-mimicking nano-constructs as a contrast agent for near infrared photoacoustic imaging,” Nanoscale, 5, 1772-1776, 2013.

5- Nuñez, V., Upadhyayula, S., Millare, B., Larsen, J. M., Hadian, A., Shin, S., Vandrangi, P., Gupta, S., Xu, H., Lin, A. P., Georgiev, G. Y., and Vullev, V., “Microfluidic Space-Domain Time-Resolved Emission Spectroscopy of Terbium (III) and Europium (III) Chelates with Pyridine-2, 6-Dicarboxylate,” Analytical Chemistry, 85, 4567-4577, 2013.

6- Bahmani, B., Lytle, C. Y., Walker, A. M., Gupta, S., Vullev, V., and Anvari, B.,“Effects of Nano-encapsulation and PEGylation on Biodistribution of Indocyanine Green in Healthy Mice: Quantitative Fluorescence Imaging and Analysis of Organs,” International Journal of Nanomedicine, 8, 1609-1620, 2013.

7- Khatibjadeh, N., Gupta, S., Farrell, B., Brownell, W., and Anvari, B.,“Effects of cholesterol on nano-mechanical properties of the living cell plasma membrane,” Soft Matter,8, 8350-8360, 2012.

8- Gharekhan, A. H., Biswal, N. C., Gupta, S., Panigrahi, P. K., and Pradhan, A., “Characteristic spectral features of the polarized fluorescence of human breast cancer in the wavelet domain,” Applied Spectroscopy, 66, 820-827, 2012.

9- Upadhyayula, S., Quinata T., Bishop, S., Gupta, S., Johnson, N. R., Bahmani, B., Bozhilov, K., Stubbs, J., Jreij, P., Nallagatla, P., and Vullev, V. I.,“Coatings of polyethylene glycol for suppressing non-specific interactions between solid microspheres and flat surfaces,” Langmuir, 28, 5059-5069, 2012.

10- Chaturvedi, S., Jung, B., Gupta, S., Anvari, B., and Rao, A. L. N.,“Simple and robust in vivo and in vitro approach for studying assembly in RNA viruses,” Journal of Visualized Experiments (61), e3645, DOI: 10.3791/3645, 2012.

11- Xia, B., Upadhyayula, S., Nuñez, V., Landsman, P., Lam, S., Malik, H., Gupta, S., Sarshar, M., Hu, J., Anvari, B., Jones, G., and Vullev, V. I.,"Amyloid histology stain for rapid bacterial endospore imaging," Journal of Clinical Microbiology, 49, 2966-2975, 2011.

12- Bahmani, B., Gupta, S., Vullev, V. I., and Anvari, B.,"Effect of polyethylene glycol coatings on uptake of indocyanine green loaded nanocapsules by human spleen macrophages in-vitro," Journal of Biomedical Optics, 16, 051303-051313, 2011. [Featured in the Virtual Journal of Biomedical Optics of OSA]

13- Hsiao, A., Hunter, M., Greiner, C., Gupta, S., and Georgakoudi I.,"Non-invasive identification of subcellular organization and nuclear morphology features associated with leukemic cells using light scattering spectroscopy," Journal of Biomedical Optics, 16, 037007-037016, 2011.

14- Gupta, S., Hunter, M., Kaplan, D. L., and Georgakoudi, I.,"Optical characterization of the nanoscale organization of mineral deposits on silk films," Applied Optics, 48, D45-D51, 2009. [Featured in the Virtual Journal of Biomedical Optics of OSA]

15- Gupta, S., Hunter, M., Cebe, P., Levitt, J., Kaplan, D. L., and Georgakoudi, I.,"Non-invasive optical characterization of biomaterial mineralization," Biomaterials, 29, 2359-2369, 2008.

16- Rice, W. L., Firdous, S., Gupta, S., Hunter, M., Wong Po Foo, C., Kim, H. J., Wang, Y., Kaplan, D. L., and Georgakoudi, I., "Non-invasive characterization of structure and morphology of silk fibroin biomaterials using non-linear microscopy," Biomaterials, 29, 2015-2024, 2008.

17- Shukla, P., Sumathi, R., Gupta, S., and Pradhan, A.,"Influence of size parameter and refractive index of scatterer on polarization gated optical imaging through turbid media," Journal of Optical Society of America-A, 24, 1704-1713,. 2007.

18- Gupta, S., Sridharraja, V. L. N., and Pradhan, A.,"Simultaneous extraction of optical transport parameters and intrinsic fluorescence of tissue mimicking model media using spatially resolved fluorescence technique," Applied Optics, 45, 7529-7537, 2006.

19- Gupta, S., Nair, M., Pradhan, A., Biswal, N., Agarwal, N., Agarwal, A., and Panigrahi, P.,"Wavelet based characterization of spectral fluctuations in normal, benign and cancerous human breast tissues," Journal of Biomedical Optics, 10, 54012-54021, 2005.

20- Gupta, S., Bhawna, Goswami, P., Pradhan, A., and Agarwal, A.,"Experimental and theoretical investigation of fluorescence photobleaching and recovery in human breast tissues and tissue phantoms," Applied Optics, 43, 1044-1052, 2004.

21- Ghosh, N., Pradhan, A., Gupta, P. K., Gupta, S., Jaiswal, V., and Singh, R. P.,"Depolarization of light in a multiply scattering medium: effect of refractive index of scatterer," Physical Review E., 70, 066607-066614, 2004.

22- Mohanty, T., Pradhan, A., Gupta, S., and Kanjilal, D.,"Nanoprecipitation in transparent matrices using an energetic ion beam," Nanotechnology, 15, 1620–1624, 2004.

23- Biswal, N. C., Gupta, S., Ghosh, N., and Pradhan, A.,"Recovery of turbidity free fluorescence from measured fluorescence an experimental approach," Optics Express, 11, 3320-3331, 2003.

24- Agarwal, N., Gupta, S., Bhawna, Pradhan, A., Vishwanathan, K., and Panigrahi, P.K.,"Wavelet transform breast tissue fluorescence spectra: a technique for diagnosis of tumors," IEEE- Journal of Selected Topics in Quantum Electronics, 9, 154-161, 2003.

25- Sahoo, P. K., Gupta, S., Pradhan, A., and Kulkarni, V. N.,"Micro structure of N+ ion beam induced epitaxial crystallized Si," Nuclear Instrumentation and Methods B, 216, 316, 2003.

Patents

1- "Non-invasive optical characterization of biomaterial mineralization", Georgakoudi, I., Gupta, S., Hunter, M., and Kaplan, D. L., WO 2009105537, A2, August 27, 2009.

2- "Microvascular normalization properties of Nitroglycerin nanotherapeutics", Ardekani, S., Ghosh, K., Gupta, S., and Mohideen, U., Provisional patent application submitted 2015.

Research Areas

Biophotonics, Nanotechnology, Biomaterials, and Tissue Engineering