

CURRICULUM VITAE

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Personal Date of Birth: 15.07.1981
Sex: Female
Nationality: Indian
Marital Status: Single

Education 2005 M. Sc. Chemistry (First Class), IIT Kharagpur
2003 B. Sc. Chemistry Hons. (First Class), Burdwan University

Awards 2005 Selected for Junior Research Fellowship by Council of Scientific
and Industrial Research (CSIR) India
2005 Qualified for the Graduate Aptitude Test in Engineering (GATE)

Research Experience (*October - 2005-present*):

Broad area of research:

Nanobiotechnology, Materials Science, Drug Delivery, Bio-organic chemistry

Research Specialization:

- ❖ Design, synthesis, physicochemical characterization and biological evaluation of multifunctional superparamagnetic iron-oxide nanoparticles and carbon nanotubes for cancer-specific targeting, imaging and therapy.
- ❖ Design, synthesis and reactivity of novel ene-diyne based dendrimers and intermediates for nucleoside analogues.

Teaching Experience (*January -2006-present*):

Graduate Teaching Assistantship (Tutoring/Laboratory demonstration) for Inorganic and Organic Chemistry Theory/ Practical Courses in IIT Kharagpur.

Publications:

Publications on Thesis:

Research Articles:

- ❖ **Das, M.;** Dhak, P.; Gupta, S.; Basak, A.; Pramanik, P. Highly biocompatible and water-dispersible, amine-functionalized magnetite nanoparticles, prepared by a low temperature, air-assisted polyol process: A new platform for bio-separation and diagnostics. *Nanotechnology* **2010**, *21*, 125103 (Highlighted as Versatile Nano-ship in *Nature India* **2010**, doi:10.1038/nindia.2010.37.)

- ❖ **Das, M.;** Mishra, D.; Dhak, P.; Gupta, S.; Maiti, T. K.; Basak, A.; Pramanik, P. Biofunctionalized, Phosphonate-Grafted, Ultrasmall Iron-Oxide Nanoparticles for Combined Targeted Cancer Therapy and Multimodal Imaging, *Small* **2009**, 5, 2883 – 2893.
- ❖ **Das, M.;** Mishra, D.; Maiti, T. K.; Basak, A.; Pramanik, P. Bio-functionalization of magnetite nanoparticles using an aminophosphonic acid coupling agent: new, ultradispersed, iron-oxide folate nanoconjugates for cancer-specific targeting, *Nanotechnology* **2008**, 19, 415101 (Selected as feature article and appeared in front cover of the journal).
- ❖ **Das, M.;** Mishra, D.; Bandyopadhyay, D.; Datir, S.; Dhak, P.; Jain, S.; Maiti, T. K.; Basak, A.; Pramanik, P. Rapid, Efficient Synthesis of Heterobifunctional Magnetic Nanoparticles and Their Chemoselective Biofunctionalization: From a Tailored Surface to a “Smart”, Theragnostic Nanomedicine. (under review in *Bioconjugate Chemistry*)

Book Chapter:

- ❖ **Das, M.;** Pramanik, P. Magnetic Nanoparticles in the Diagnosis and Imaging of Cancer. Accepted Book Chapter in *Nanotechnology: Perspectives in the Diagnosis and Treatment of Cancers*, Edited by R. Banerjee, to be published through Narosa International Publishers

Other Publications:

Research Article:

- ❖ Jain, S.; Mathur, R.; **Das, M.;** Swarnakar, N. K.; Mishra, A.K. Folate coupled stealth liposomes for targeted tumor therapy *Nanomedicine* 2011 (Accepted).
- ❖ Bhattacharya, D.; **Das, M.;** Mishra, D.; Banerjee, I.; Sahu, S.K.; Maiti, T.K.; Pramanik, P. Folate receptor targeted, carboxymethyl chitosan functionalized iron oxide nanoparticles: a novel ultradispersed nanoconjugates for bimodal imaging *Nanoscale* 2010 (Accepted).
- ❖ Dhak, P.; Dhak, D.; **Das, M.;** Pramanik, K.; Pramanik, P. Impedance Spectroscopy study of LaMnO₃ modified BaTiO₃ ceramics *Materials Science and Engineering: B* **2009**, 164, 165-171
- ❖ Dhak, P.; Dhak, D.; **Das, M.;** Subashchandrabose, D.; Pramanik, P A Novel Synthesis of FeNbO₄ Nano-rod by Hydrothermal Process (under minor revision in *Journal of Nanoparticle Research*)
- ❖ Dhak, P.; Dhak, D.; **Das, M.;** Pramanik, K.; Pramanik, P. Dielectric and Impedance Spectroscopy Study of Ba_{0.8}Bi_{2.133}Nb_{1.6}Ta_{0.4}O₉ Ferroelectric Ceramics, Prepared By Chemical Route (under review in *Journal of Materials Science: Materials in Electronics*)
- ❖ Jain, S.; Mistry, M.A.; Swarnakar, N.K.; **Das, M** Enhanced dermal delivery of acyclovir using solid lipid nanoparticles (under review in *Nanomedicine: Nanotechnology, Biology and Medicine*)
- ❖ **Das, M.;** Bandyopadhyay, D.; Singh, R.P.; Jain, S Novel Azido-Terminated Oligo-Ethylene Glycol Silane for Orthogonal Biofunctionalization of Magnetite Nanoparticles: From Tailored Surface to Molecular Diagnostics (Communicated in *Bioconjugate Chemistry*)
- ❖ Swarnakar, N.K.; Jain, A.K.; Singh, R.P.; Godugu, C.; **Das, M.;** Jain, S. *In Vitro* and *In Vivo* Evaluation of CoQ10 Loaded Polymeric Nanoparticles: An Attempt to Rescue the Cells from Oxidative Stress (Communicated in *Biomaterials*).
- ❖ **Das, M.;** Singh, R.P.; Datir, S.; Kumar, S.; Jain, S. Design, Synthesis and Biological Evaluation of Novel Multifunctional Carbon Nanotube based “Smart” Drug Delivery Platform (Communicated in *Nano Letters*).

- ❖ Datir, S.; **Das, M.**; Singh, R.P.; Jain, S. Hyaluronate tethered multiwalled carbon nanotubes for tumor-targeted delivery of Doxorubicin (Manuscript in preparation).
- ❖ Kumar, S.; **Das, M.**; Jain, S. Effect of Length and Reaction Variables on the Colloidal Stability of Oxidized Multiwalled Carbon Nanotubes (Manuscript in preparation).
- ❖ **Das, M.**; Datir, S.; Jain, S. One Step Bio-engineering of Multiwalled Carbon Nanotubes using tandem diazo transfer and “click chemistry” (Manuscript in preparation)
- ❖ **Das, M.**; Singh, R.P.; Datir, S.; Jain, S. Estradiol appended multiwalled carbon nanotubes for tumor-targeted delivery of Paclitaxel (Manuscript in preparation).

Review Article:

- ❖ Thakre, V.S.; **Das, M.**; Jain, A.K.; Patil, S.; Jain, S. Carbon Nanotubes in cancer theragnosis *Nanomedicine* **2010** 5(8), 1277-301
- ❖ Jain, A. K.; **Das, M.**; Swarnakar, N.K.; Jain, S. Engineered PLGA Nanoparticles: An emerging Delivery Tool in Cancer Therapeutics. *Crit Rev Ther Drug Carrier Syst.* **2010** (in press).
- ❖ Harde, H.; **Das, M.**; Jain, S. Oral Solid Lipid Nanoparticles: A Bioavailability Enhancer Tool (under review in Expert Opinion For Drug Delivery).

Book Chapter:

- ❖ Jain, S.; Kailey, S.; **Das, M.** Nanocarriers as non-viral vectors for gene delivery. Accepted Book Chapter in *Nanotechnology in Biology and Medicine*, edited by S.K. Singh

International and National Conferences/ Workshops/ Symposia

- ❖ **Das, M.**; Basak, A.; Pramanik, P. A “Click Chemistry” Approach to the design of a Multifunctional Nanomedicine for “Smart” Cancer Diagnosis and Therapy **Oral Presentation** delivered in *Second Summer School on Nanotechnology for Advanced Drug Delivery*, August 10-14 **2009** NIPER, SAS NAGAR, Mohali, Punjab.
- ❖ **Das, M.**; Pramanik, P.; Development of surface-engineered superparamagnetic nanoparticles for targeted cancer therapy **Oral Presentation** delivered in *Second Winter School on Nanotechnology for Advanced Drug Delivery*, Feb 24-28 **2009** NIPER, SAS NAGAR, Mohali, Punjab.
- ❖ **Das, M.**; Pramanik, P.; Basak, A. Highly Water-Soluble Magnetofluorescent Iron-Oxide Nanoparticles for Cancer-Specific Targeting: Synthesis, Characterization and *In-vitro* Studies **Poster Presentation** in *International Symposium on Frontiers of Functional Materials (ISFFM-2009)*, January 6-7 **2009**, Calcutta University, Kolkatta.
- ❖ **Das, M.**; Basak, A.; Pramanik, P. A Multifunctional Superparamagnetic Nanodevice for “Smart” Cancer-Diagnosis and Therapy **Poster Presentation** in *DAE-BRNS, International Symposium on Materials Chemistry (ISMC-2008)*, December 2-6 **2008**, BARC, Mumbai.
- ❖ **Das, M.**; Basak, A.; Pramanik, P. Recent development in the use of superparamagnetic iron-oxide nanoparticles for “smart” cancer diagnostics and therapeutics **Oral Presentation** delivered in *National Seminar on Current Trends in Chemistry-II*, March 4, **2008**, Kalyani University, Kalyani, West-Bengal.
- ❖ Participation in the Interaction Sessions at “**Science Conclave: A Congregation of Nobel Prize Winners**” organized at the Indian Institute of Information Technology, Allahabad during December 15-21, **2008** Allahabad.