

WORKSHOP ON

**NANOTECHNOLOGY & NANOSCIENCE OF MAGNETIC
PARTICLES FOR BIOMEDICAL APPLICATIONS**

(NNMPBA – 2007)
Jan 29th to Feb 1st, 2007

BHAVNAGAR UNIVERSITY, BHAVNAGAR



Organized by

Centre for Excellence in Nanotechnology of Nanomagnetic Particles-CENNP,
Bhavnagar University, Bhavnagar

Sponsored by

Gujarat Council of Science & Technology, Gandhinagar
&
SIDA supported Asia-Link programme Swedish Research Council, Stockholm

About the Workshop

Scientific as well as technological interest in nano-magnetic materials is fast growing. It is speculated that by 2010 *market for nano materials will exceed \$20 billions*. Many non-conventional biomagnetic applications like magnetically targeted drug delivery systems, magnetically induced hyperthermia for cancer treatment, cell and DNA separation, tissue engineering, MRI contrast agents, biosensors are being explored. Some of these have turned into market based technologies while targeted drug delivery is currently undergoing human trials. Based on this survey, it is felt that topical *National Workshops on Nanotechnology & Nanoscience of Magnetic Particles for Biomedical Applications - NNMPBA-07* will be fruitful. In the present NNMPBA-07, we propose to focus on recent advances made in the experimental, theoretical as well as application studies in a variety of materials.

About the Department

Department of Physics, Bhavnagar University right from its inception has committed to develop *Science and Technology of Nanomagnetic particles* in general and *ferrofluids* in particular. We have successfully completed several research and consulting projects and organized the 7th *International conference on Magnetic fluid in 1995*. During that conference we formed Indian Society of Magnetic Fluids Research (ISMFR) (Please visit www.ismfr.org). We have organized National conference / workshop / seminar of different fields in India viz. GNFC – Bharuch, Pondicherry engineering college – Pondicherry, and National Physical Laboratory, New Delhi. The department has successfully completed an overseas industry consultancy project sponsored by *Ferrofluidics Corp. USA* on development of new hydrocarbon based magnetic fluid for transformer applications. Apart from these the Department has developed certain *engineering based devices like Dampers, inclination sensors, ferro-cooled loud speakers* etc. *A centrifugal switch, and dampers using magnetic fluid developed by us have been patented.* The department of Physics has also tied up with *Royal Institute of Technology, Sweden* to develop the nanomagnetic particles for biomedical applications. *Gujarat Council of Science & Technology (GUJCOST)* has recently established *Center for Excellence in Nanotechnology and Nanomagnetic Particles – CENNP*. Research students of this department have received various National awards like BOYSCAST (Three), FTPYS (One), Vikram Sarabhai Award (One) etc. Recently *Prof. R.V. Mehta* a *pioneer in the field of magnetic fluids* and Ex.

Chairman of the Department of the Physics have received prestigious *Ramanna Fellowship* from the Department of Science and Technology (DST), government of India.

Invited Speakers

To provide the insight to the students about the latest trends in the field of nanotechnology and nanoscience, eminent scientists and technocrats across the globe and from the various National laboratories as well as industrialist from various reputed pharmaceutical industries will deliver their speech.

1. *Dr. P.K. Kaw*, Director, Institute for Plasma Research, Bhat, Gandhinagar will give inaugural address. He will also give a popular lecture under the “**Narsimham Lecturer Series**”. He will speak on “**Agni Dev ki Stuti**”.
2. *Dr. K.V. Rao*, Professor, Royal Institute of Technology, Sweden will speak on “New trends in Nanoscience enabling novel technologies.
3. *Dr. John Philip*, Head, Smart Section, NDED, ITG, Indira Gandhi Centre for Atomic Research, Kalpkam.
4. *Dr. S.K. Kulkarni*, Professor, Department of Physics, University of Pune.
5. *Dr. V.K. Aswal*, Scientist, Solid State Physics Division, Bhabha Atomic Research Centre (BARC).
6. *Dr. Kuldip Raj*, Ferrotech Corp., USA. He will speak on “Ferrofluid Nanomagnetic particle for Biomedical Applications”.
7. *Dr. Ram Reddy*, Director (R&D), Next Generation Therapeutics, Inc., USA. He will speak on “Multifunctional Magnetic Nanoparticles for Imaging and Treatment of Brain Tumors”.
8. *Dr. Manish Grover*, General Manager, Pharmaceutical technology centre, Zydus-Cadila, Ahmedabad.
9. *Dr. L. Belova*, Assistant Professor, Royal Institute of Technology, Sweden.
10. *Dr. C.N. Ramchand*, Director (R&D), Kemin Technologies (India) Ltd., Tamil Nadu.
11. *Dr. Rakesh Raval*, Gujarat Cancer Research Institute, Ahmedabad.
12. *Prof. R.V. Mehta*, Ramanna Fellow, Department of Physics, Bhavnagar University will deliver a lecturer under the “Rudraiah Lecturer Series”.

Participation

We have received overwhelming response from scientist, technocrats, academicians and research students of various National and International laboratories such as Bhabha Atomic Research Centre (BARC), Mumbai, National Physical Research Laboratory (NPL), New Delhi, Royal Institute of Technology, Sweden, Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Gujarat Cancer Research Institute (GCRI), Ahmedabad, Industries such as Ferrotech Corp. Ltd., USA, Kemin Technologies (India), Tamil Nadu, Zydus-Cadila, Ahmedabad and from the various Universities of India. This is a multidisciplinary workshop with participation from various R&D background such as Chemistry, Physics, Mathematics, Bioinformatics, Biotechnology, Medical sciences, Pharmaceutical etc. We are expecting 100 participants to participate in the Workshop.

Unique Feature of the Workshop

To encourage the young researcher to pursue their research activity in the field of Nanoscience and Nanotechnology for Biomedical Applications, Travel and local hospitality will be provided by the host.

Technical Sessions

(DAY – I)
January 29, 2007

Registration

13:00-14:00

Inaugural Program

Time : 14:00 – 15:30

(DAY – II)
January 30, 2007

Sr. No.	Name of speaker	Session chair(s)	Time
1	Dr. K.V.Rao	Prof. R.V. Mehta	09:00-09:45
2	Dr. John Philip		09:50-10:35
3	Dr. S. Kulkarni	Dr. G. Vaidanathan	11:00-11:45
4	Dr. V.K. Aswal		11:50-12:35
5	Oral - 1	Dr. R.P. Pant /	14:30-14:45
6	Oral - 2	Dr. H.H. Joshi	14:50-15:05
7	Oral - 3		15:10-15:30
8	Oral - 4	Dr. R.P. Pant /	16:00-16:15

9	Oral - 5	Dr. H.H. Joshi	16:20-16:35
10	Oral - 6		16:40:16:55

(DAY – III)
January 31, 2007

Sr. No.	Name of speaker	Season chair(s)	Time
1	Dr. Kuldip Raj	Prof. K.V. Rao /	09:00-09:45
2	Dr. Ramareddy	Dr. John Philip	09:50-10:35
3	Dr. Manish Grover	Dr. V.K. Aswal /	11:00-11:45
4	Dr. L. Belova	Prof. N. Rudraiah	11:50-12:35
5	Dr. R.D. Ghodasara		14:00-14:45
6	Dr. C.N. Ramchand	Dr. L. Belova	14:50:15:35
8	Oral - 7		16:00-16:15
9	Oral – 8	Dr. S.P. Bhatnagar	16:20-16:35
10	Oral - 9		16:40:16:55

(DAY – IV)
February 1, 2007

Sr. No.	Name of speaker	Season chair(s)	Time
1	Dr. Ramchand	Dr. R. Reddy /	09:00-09:45
2	Dr. Rakesh Rawal	P.G. Siddheshwar	09:50-10:35
		Rudraiah Lecturer	
	Prof. R.V. Mehta	Dr. Kuldip Raj	11:00-11:50

SPONSORING AGENCIES

Gujarat Council on Science & Technology (GUJCOST), Gandhinagar

Swedish Research Council, Stockholm, Sweden

Bhavnagar University, Bhavnagar

Council for Scientific and Industrial Research (CSIR), New Delhi

Indian National Science Academy, New Delhi

ORGANISING COMMITTEE

Patron

Prof H C Trivedi

(Vice Chancellor, Bhavnagar University, Bhavnagar)

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Prof R V Upadhyay, Head Department of Physics, Bhavnagar University

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Members

Prof R V Mehta, Ramanna Fellow, Department of Physics, Bhavnagar University.

Prof S P Bhatnagar, Professor, Department of Physics, Bhavnagar University.

Dr. R P Pant, Head, XRD Division, National Physical Laboratory (NPL), New Delhi.

Dr. G M Sutariya, Head, Department of Physics, Sir P.P. Institute of Science, Bhavnagar

Prof A M Prabhakar, Scientific Advisor, GUJCOST, Science & Technology Department, Government of Gujarat, Gandhinagar

Prof. P N Bhatt, Professor, Department of Chemistry, Bhavnagar University, Bhavnagar

Dr. Anjanaben Vala, (I/c) Head, Department of Bioinformatics, Bhavnagar University, Bhavnagar.

Prof N C Desai, Professor, Department of Chemistry, Bhavnagar University, Bhavnagar

Prof V R Rathod, Dean, Faculty of Science, Bhavnagar University, Bhavnagar

Tentative Budget of the Workshop

1.	TA/DA to speakers (air fare)	Rs. 1,00,000.00
2.	TA/DA to participants (students)	Rs. 0,50,000.00
3.	Accommodation (speakers)	Rs. 0,30,000.00
4.	Accommodation (students / participants)	Rs. 0,70,000.00
5.	Lunch / Dinner / Tea	Rs. 0,90,000.00
6.	Printing / Stationary / Conference Materials	Rs. 1,00,000.00
7.	Transportation	Rs. 0,40,000.00
8.	Administration expenditure, videography, audio-system, etc.	Rs. 0,70,000.00
Total		Rs. 5,50,000.00

Total Budget sanctioned by the various sponsoring agencies of India **Rs. 4,50,000.00**

Grant requested from Swedish Research Council **Rs.1,00,000.00**

(15,000.00 SEK)