



# MRSI Newsletter

A quarterly publication of the Materials Research Society of India  
for circulation amongst its members

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## From the Editors' Desk

### Nanoparticles repair damaged materials

Defects determine structure-sensitive properties of materials. Practically, all mechanical properties are structure-sensitive properties. The concept of a perfect lattice is adequate for explaining structure insensitive properties. But it is necessary to consider numerous lattice defects to understand structure-sensitive properties.

Researchers at the universities of Massachusetts and Pittsburgh in the US have unveiled a new “repair-and-go” technique to repair damaged surfaces using microcapsules filled with a solution of CdSe nanoparticles. The microcapsules glide over a surface and stop to repair any defects it encounters by releasing the nanoparticles into them and move to the next defects. It might be used as a precise way to detect damaged substrates by depositing sensor material into the regions of concern. The work has been reported in *Nature Nanotechnology* 7, 87–90 (2012).

This issue of newsletter provides a brief report of the 23<sup>rd</sup> AGM, held at Thapar University, Patiala during February 13-15, 2012. The organizers of the AGM deserve appreciation for the excellent organization and hospitality. Next AGM will be held at IGCAR, Kalpakam.

**K K Nanda**  
Editor

*For more details about the activities of MRSI, members are advised to visit the society's website at*

**[www.mrsi.org.in](http://www.mrsi.org.in)**

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## MRSI NEWSLETTER

Volume B 12, Number 2  
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The MRSI Newsletter is a quarterly update published by the Materials Research Society of India. Members are requested to contribute information of interest to Materials Science community. Members can inform through the Newsletter, recognitions/awards received by them, changes in address, forthcoming events, and any interesting scientific/technological developments in the area of materials. The relevant information should be sent to the following address:

### Editors

### **MRSI Newsletter**

Materials Research Society of India  
IISc Campus, Bangalore 560 012, India

Email: [office@mrsi.org.in](mailto:office@mrsi.org.in)  
[nanda@mrc.iisc.ernet.in](mailto:nanda@mrc.iisc.ernet.in)

### **Awards & Distinctions Conferred on Members**

We are happy to report that the following members of Materials Research Society of India have received awards and distinctions shown against their names. MRSI congratulates them.

C. R. Gautam                      UGC Research Award-2012

*P.S: Members are requested to communicate to the Editorial office about the Awards, Honours and Distinctions they have received from various agencies.*

### **STUDENTS' PROJECTS**

MRSI would be supporting projects of students doing B.Tech, M.Tech, ME, M.Phil, Ph.D in the area of Materials Science and Technology. The projects should be undertaken under the supervision of a MRSI member. The students can submit their proposals to the MRSI office before **October 31<sup>st</sup> 2012**. After the projects are approved, the students would be supported financially (registration waiver, II class AC train travel and local hospitality) for participating in the AGM of MRSI to present the results of the projects approved.

### **Minutes of the 23<sup>rd</sup> Annual General Meeting of MRSI**

The Twenty Third Annual General Body Meeting of Materials Research Society of India was held on Tuesday, the 14<sup>th</sup> February 2012 between 18.00-19.30 hrs at the Committee Room, Thapar University, Patiala.

Prof. S B Krupanidhi, Vice President-General Secretary presented the Annual report of MRSI for the year 2011.. Some aspects of the report are given below.

- ❖ The APAM India Chapter held its meeting at Patiala on 12<sup>th</sup> February, 2012.
- ❖ The paper entitled “**Formation of nanoscale tungsten oxide structures and colouration characteristics**” by Vijay Bhooshan Kumar and Dambarudhar Mohanta, Nanoscience Laboratory, Department of Physics, Tezpur University, Tezpur ” by has been adjudged as the best paper published in the BMS, Volume 34, No.3, June 2011, pp 435.
- ❖ The statement of accounts for the year 2010-11 and the Provisional statement as on 31.12.2011 were presented at the AGM.
- ❖ The following scientists have been elected as Honorary Members of MRSI for the year 2012.  
    Dr. C Jagadish (Australian National University, Australia)  
    Dr. Narendra B Dahotre (University of North Texas, USA)
- ❖ The 24<sup>th</sup> Annual General Meeting of MRSI will be held at IGCAR, Kalpakkam during February 2013. This would be organized by the Kalpakkam chapter of MRSI.

## REPORT ON THE 23<sup>rd</sup> AGM OF MRSI

Thapar University (TU), Patiala and Materials Research Society of India (MRSI) jointly organized the 23<sup>rd</sup> Annual General Meeting of Materials Research Society of India (MRSI) in Patiala during February 13-15, 2012. The theme symposium on **“Functional Materials for Sustainable Energy and Advanced Technologies”** was also held during this period. This was the first time that Materials Research Society of India (MRSI) held such a big event in Punjab.

Prior to the AGM, the Asia Pacific Academy of Materials (APAM) meeting was held on April 12, 2012. Lectures were delivered by Professor O.N. Srivastava, President APAM, Professor Ratnamala Chatterjee (IIT, Delhi) and Dr. Abu Shaz, (BHU, Varanasi). Dr. G. Sundararajan, President MRSI presided over the meeting.

The inaugural function of the 23<sup>rd</sup> AGM-MRSI was held in the Thapar University auditorium on February 13, 2012. Dr. S.K. Salwan, Chairman, Armaments Research Board, Defence Research and Development Organization, Govt. of India was the Chief Guest. Dr. G. Sundararajan, Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad and the president of MRSI was Guest of Honour. Dr. Abhijit Mukherjee, Director, Thapar University presided over the function. Dr. K.K. Raina, Convener, 23<sup>rd</sup> AGM-MRSI welcomed the Chief Guest, dignitaries, MRSI Council Members and the participants. The convener stated that it was a great moment for Thapar University to host such an important event on Materials Science. He expressed gratitude to Professor C.N.R. Rao, the Founder President of Materials Research Society of India (MRSI) and the MRSI Council who kindly gave consent to host 23<sup>rd</sup> Annual General Meeting in Patiala. He said at TU, teaching and research activities in Material Science started in 1989, the same time when MRSI was founded. He gave an over view regarding the organization of 23<sup>rd</sup> AGM-MRSI. Professor S.B. Krupanidhi, the Vice President cum General Secretary, MRSI in his remarks highlighted the activities of MRSI. Considering the scope of Material Science and Engineering, the Society does its best to reach out to all parts of the country and to popularize Materials Education Programme he emphasised. Dr. G. Sundararajan, the President, MRSI while delivering his speech focused on the road map of Material Research Activities in the country and emphasized on developing future collaborations between the research groups within the country and strengthen the development of indigenous technologies. He said that India has a great scope as well as challenge to march ahead in the Materials Science Programmes and this millennium has to see that the Material Research Programmes of our country gets a great boost. Dr. Abhijit Mukherjee in his presidential remarks stressed on the need to establish research and technical collaboration between various Material Scientists, researchers and the technologists to synergies in order to look for low cost and state-of-the-art technology in Material Science Programmes. Dr. Salwan while delivering his inaugural address, highlighted the need for strengthening Materials Research Programme in the country with reference to the Defence Research and Development programme. He gave an over view of the thrust areas in which Material Scientists and Technologists can play an important role. His presentation particularly targeted the young minds to explore various technologies that are relevant to Defence Research and Development Organization (DRDO).

Professor Vikram Kumar (IIT, Delhi) delivered the Distinguished Materials Science of the year award lecture followed by three ICSC superconductivity and Materials Science Prize Lectures by Professors S.M. Shiva Prasad (JNCASR), R.P. Tandon (Delhi University) and Amlan J. Pal (IACS) Kolkata. CNR Rao Prize Lecture in Advanced Material was delivered by Professor A.K. Sood (IISc) Bangalore. In addition, 15 MRSI medal Lectures were delivered by the medalists. These Lectures covered a wide spectrum of areas in Materials Science. The medalists shared their experiences with the students. The young audience got motivated to explore newer research programmes in the cutting-edge technologies. A special session on Functional Materials Energy

and Advanced technologies was organized on February 14, 2012. Professor G.P. Das (IACS) Kolkata and Dr. S. Das (DEI, Agra) delivered Lectures of hydrogen storage and solar energy generation considering the wider scope of energy materials. Professor A.K. Grover (TIFR, Mumbai) delivered an invited Lecture on spin ferromagnets as novel functional materials. Dr. Neeraj Sinha spoke on III-Nitrides for energy applications.

The G.C. Jain Memorial best thesis award Lectures were held in Technical session VIII in which five shortlisted candidates made their presentations . Dr. Debraj Choudhury (Rs Ken Japan) and Dr. Mallar Ray (BESU Shibpur) shared the best thesis award. Debraj delivered a very interesting and informative Lecture on “Effects of disorder on physical properties of selected transition metal oxides” and Dr. Mallar Ray delivered a Lecture on “Luminescence from silicon nanostructures”.

This symposium had IX Technical Sessions and IV Parallel Poster Sessions. About 250 papers were received out of which 164 were accepted for poster presentations. Five best poster awards were given at the valedictory function. MRSI council meeting was held in the Thapar University committee room followed by Annual General Body meeting and medal distribution ceremony in the University convention Hall. Dr. G. Sundararajan, President MRSI presented the awards to medal winners. Overall, it was an impressive MRSI meeting.

**K.K. Raina**  
**Convenor, 23<sup>rd</sup> AGM-MRSI**

### **ANNOUNCEMENT**

A review of the functioning of the local chapters and subject groups of MRSI was discussed during the council meeting of MRSI held at Bhopal during February 2011. Accordingly, all those chapters who are interested in conducting their annual activities can make a proposal to MRSI, including the budget required for the year 2012-13 and accordingly, the seed money would be sanctioned to the chapters for conducting their activities. Please note that the council decided to consider a maximum of 3 chapter activities per year for sanctioning the seed money. All the proposals from the local chapters will have to reach MRSI office on or before **July 31<sup>st</sup>, 2012**.

## New Members

Enrolled between January 1 and March 31, 2012

### Life Members

Subrat Kumar Barik (LMB2011)  
Department of Physics  
NIT Silchar, P.O REC Silchar  
**Cachar (Assam)**  
Off (Tel) :03842-242914  
Fax : 03842-224797  
Email: subrat.nits@gmail.com

Amit Kumar Chakraborty (LMB2012)  
Carbon Technology Lab  
Department of Physics  
National Institute of Technology  
Mahatma Gandhi Avenue  
**Durgapur 713 209**  
Off (Tel) 343-2754780  
Fax : 0343-2757375  
Email:amitkc61@gmail.com

Pankaj Srivastava (LMB2013)  
Applied Science Group  
ABV-IITM  
Morena Link Road  
**Gwalior 474 015**  
Off (Tel): 0751-2449814  
Email: pankajs@iitm.ac.in

Sanjeev Kumar Tyagi (LMB2014)  
C/o Prakash Narayan Tyagi, Vill:  
Ghissukhera  
O.O Charthawal Dist.  
**Muzaffarnagar 251 311**  
Off (Tel):01664-242021  
Fax : 01664-242021  
Email: sanjeev\_01tyagi@yahoo.com

Umashankar Payanam Ramachandra  
(LMB2015)  
Biomedical Technology Wing  
Sree Chitra Tirunal Institute for Medical  
Sciences and Technology, Poojappura  
**Thiruvananthapuram 695 012**  
Off (Tel):0471-2520226  
Fax : 0471-2341814  
Email: umashnkr@sctimst.ac.in

Lakshmi Srinivas Chennupati  
(LMB2016)  
Department of Mechanical  
Engineering, Bapatla Engineering  
College, Bapatla Post and Mandal  
**Guntur Dist. 522 101**  
Off (Tel):08643-224244  
Fax : 08643224246  
Email: chlebec@gmail.com

Kalyan Mandal (LMB2017)  
S N Bose National Centre for Basic  
Sciences, Block JD, Sector III, Salt  
Lake, **Kolkata 700 098**  
Off (Tel):033-2335 5706/5707/5708  
Fax : 033-23353477  
Email: kalyan@bose.res.in

Priyaranjan Mohapatra (LMB2018)  
Silicon Institute of Technology  
Patia, P.O KIIT  
**Bhubaneswar 751 024**  
Off (Tel):0674-2725448  
Fax : 0674-2725312  
Email: mpriyaranjan@gmail.com

Manis Kumar Jha (LMB2019)  
Metal Extraction and Forming  
Division, National Metallurgical  
Laboratory, **Jamshedpur 831 007**  
Off (Tel):0657-2345302  
Fax : 0657-2345213  
Email: mkjha@nmlindia.org

Sanjeeb Kumar Rout (LMB2020)  
Department of Applied Physics  
BIT, Mesra  
**Ranchi 835 215**  
Off (Tel):09471555277  
Email: skrout@bitmesra.ac.in

Prabhulingaiah (LMB2021)  
House No. 1746/27  
Anjaneya Badavane, 16th Cross  
Davangere Taluk & Dist  
**Davangere 577 004**  
Off (Tel):00962-779386708  
Email: prabhu2626@yahoo.co.in

Veerasamy Senthilkumar (LMB2022)  
Department of Science and  
Humanities, Jayaram College of  
Engineering and Technology  
**Pagalavadi 621 014**  
Off (Tel):04327-230270  
Fax : 04327-230260  
Email: tvskumar@yahoo.com

Narendra Babu Simhachalam  
(LMB2023)  
H No. 2-7-1137/401  
Neelam Enclave, Kanakadurga Colony,  
Waddepally, Hanmakonda  
**Warangal 506 001**  
Tel (R): 0870-2456465  
Email: narendraphysics@gmail.com

Arun Bhupathi Poranki (LMB2024)  
H. No. 26-10-5/4  
Kopalle Vari Thota, Balurumudi  
West Godavari District  
**Bhimavaram 534 202**  
Tel (R): 9885923485  
Email: arunbhupathi@gmail.com

Ayush Khare (LMB2025)  
Department of Physics  
National Institute of Technology  
GE Road, **Raipur 492 010**  
Off (Tel): 0771-2254199  
Fax : 0771-2254600  
Email: akhare.phy@nitrr.ac.in

### Honorary Members

Prof. Chennupati Jagadish  
Department of Electronic Materials Engineering  
School of Physics and Engineering  
Australian National University  
Canberra ACT 0200, **Australia**  
Tel (Off): (02) 6249-0363  
Email: c.jagadish@ieee.org

Prof. Narendra B Dahotre  
Department of Materials Science and Engineering  
University of North Texas  
1155, Union Circle 305310  
Denton, Texas 76203-501, **USA**  
Tel (off): 940-565-2031  
Email: Narendra.Dahotre@unt.edu

## **Patron Membership**

Professional Societies, Research bodies, Laboratories and Companies willing to support activities of MRSI (through a one-time contribution of Rs. 50,000/- are enrolled as Patron members by the Council of the MRSI.

### **Privileges of Patron Members:**

- Publication of their names in MRSI Newsletter
  - Bulletin of Materials Science / MRSI Newsletter
  - MRSI Update
- Free supply of all periodicals published by MRSI such as:

-	Symposium proceedings at prices applicable to members
-	Display of Company Literature free of charge at MRSI meetings
-	Discounts on advertisements in Newsletter
-	Advance notification of programmes and events
-	Free employment Advertisements in the MRSI Newsletter
-	Registration of 2 company representatives in each society meeting at member registration rates

*We appeal to all organizations /laboratories/companies involved in the R&D/Educational activities of Materials Science and Technology to become Patron members.*

***Request for Patron membership may be made to:***

**Prof. S B Krupanidhi  
General Secretary, MRSI  
Materials Research Centre  
Indian Institute of Science  
Bangalore 560 012  
Email : svsmrsi@physics.iisc.ernet.in**

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**Bangalore 560 012**