



MRSI Newsletter

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

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January 2004

From the Editors' Desk

In the special address delivered at the recently concluded 91st Indian Science Congress, the President of India gave a twelve point agenda for the scientific community to help India become a developed nation by 2020. Since materials development is an important component in the progress, it certainly implies that the Materials Scientists have a decisive role to play in this endeavour. We should take this as a challenge and play our part.

The organizers of the Fifteenth Annual General Meeting of MRSI have put together a very comprehensive agenda for the meeting. The special character of the venue together with the excellent lectures promises a wholesome meeting ahead. The detailed programme is included in this issue. It is hoped that a large number of our members will be participating in the event.

The Editors take this opportunity to wish all members a very happy, prosperous and purposeful year ahead.



H L Bhat
R V Krishnan
Editors

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

www.igcar.ernet.in/mrsi

In this issue

From the Editors' Desk	1
Awards & Distinctions	2
Chapter News	2
Special Announcement	2
Obituary	2
India-Japan Seminar: A Report	3
Materials for Rural Technology: A Report	4
Report on the Fourth Asian Meeting on Ferroelectricity (AMF-4)	5
APAM & 15 th AGM of MRSI-Programme	6
Notice of the 15 th AGBM	7
New Members	8
Calendar of Events (Jan-Sep 04)	10
New Books	11
Patron Membership	12

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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:

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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.

Mashelkar R A	Lal Bahadur Shastri National Award for Excellence in Public Administration and Management Sciences for 2002
Chattopadhyay K	GD Birla Gold Medal, Indian Institute of Metals 2003
Rodriguez P	Platinum Medal, Indian Institute of Metals, 2003

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

Chapter News

Pune Chapter

HALF-DAY SYMPOSIUM ON NANOMATERIALS -RECENT HAPPENINGS

A Half-Day Symposium on "NANOMATERIALS - RECENT HAPPENINGS" was organized by the Materials Research Society of India (MRSI) Pune Chapter. The symposium sponsored by the Centre for Advanced Studies, Department of Physics, University of Pune was held at the C V Raman Hall, on August 8, 2003 between 2.00 and 6.00 PM. The welcome speech was given by Dr. B.K. Das Chairman, MRSI Pune Chapter and the introductory remarks by Prof. Joag.

Prof. Kanhere, University of Pune, chaired the first session in which there were two invited talks. The first talk was delivered by Dr. Murali Sastry, Scientist, NCL on Shape Matters in Nanomaterials followed by the talk of Prof. (Mrs) S.V. Bhoraskar, University of Pune on the Developments in Nanotubes.

The second session chaired by Prof. Dharmadhikary had three lectures. The first lecture was by Prof. (Mrs) S.K. Kulkarni, University of Pune on the topic Engineered Nanostructures followed by the talk of Dr. P.K. Khanna, C-MET, Pune, on Nanoparticles-Synthesis in Polymers. The final talk was by Prof. S.K. Date, University of Pune on Nanoclusters in Semiconductors and Ceramics.

Dr. B.K.Das, Chairman gave the concluding remarks which was followed by the vote of thanks.

The seminar was attended by the staff and students of the University of Pune, engineering colleges, scientists from NCL, CMET, TRDDC and representatives from industries. In all, around 200 participants were present.

**I.S. Mulla, Secretary
MRSI Pune Chapter**

Special Announcement

It is proposed that the selected award winning posters of students at the National level in the MRS Meetings will be put on the IUMRS website for wider dissemination.

OBITUARY

Prof. S Ramaseshan passed away in Bangalore on December 29, 2003. He was the first recipient of the *Distinguished Materials Scientist of the year award in 1990*. In his passing away the Materials Science Community of the country and MRSI has lost a distinguished leader.

THE INDIA-JAPAN SEMINAR ON MATERIALS EDUCATION, RESEARCH STRATEGY AND NEW MATERIALS-A REPORT



The India-Japan Seminar was held in 2 parts. The first part dealt with *Materials Education and Research* as the F1 Forum of IUMRS-ICAM 2003. This was held from 9th October to 11th October 2003. During this Forum session, there were 36 oral presentations (India: 6: Japan: 14 and rest from other countries) following which there was a Panel discussion on Materials Education and Research. The sessions had the following themes:

- Materials Research
- India-Japan Seminar on Materials Education & Research
- Materials Education

Experts in the area of Materials Science and Technology from various countries including India and Japan delivered the talks. From India Profs. CNR Rao, P Rama Rao, D Chakravorty, S V Subramanyam, Shobhana Narasimhan, P Ayyub and T Pradip delivered talks and participated in the discussions. The technical papers of presentations will be published in a special issue of the Proceedings of IUMRS-ICAM.

In the second part of the India-Japan seminar, there was a one-day meeting on *New Materials*. This was held on 12th October 2003 and was organized jointly by Prof. Doyama and Prof. P Rama Rao. During this one-day seminar, the following presentations were made:

- Hydrogels with Advanced Flexibility and Smart Functional Performance
Atsushi Suzuki, Yokohama National University, Japan
- Non-Linear Optical Response in Nanocrystalline Metals and Semiconductors
Pushan Ayyub, Tata Institute of Fundamental Research, Mumbai, India
- Highly Conducting Amorphous Phase of Carbon and Effects of Intercalation
S V Subramanyam, Indian Institute of Science, Bangalore, India
- My Last Dream in My Life- Transmission Positron-Electron Microscope
Masao Doyama, Teikyo Institute of Science and Technology, Japan
- Making and Manipulating Nanomaterials through Soft Chemistry
CNR Rao, Jawaharlal Nehru Centre for Advanced Scientific Research and Indian Institute of Science, Bangalore, India
- Innovative Concepts and Methodologies of Materials Research
Hideomi Koinuma, Tokyo Institute of Technology, Japan
- *ab initio* Studies of Nanomaterials
Y Kawazoe and Amit Jain, Tohoku University, Japan
- Nanowires and Nano-Interfaces
D Chakravorty, Indian Association for the Cultivation of Science, Kolkata, India
- Approach to the Design and Development of Catalysts and Materials-The State of the art
T Akira Miyamoto, Akira Endou, Momoji Kubo and Parasuraman Selvam, Tohoku University, Japan
- *ab initio* Studies of Metal Surfaces
Shobhana Narasimhan, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India
- Reactions of Nanomaterials: Sensors and Novel Materials
A Sreekumaran Nair, C Subramaniam, Renjis T Tom, M L Rosemary, Ian MacLaren and T Pradip, Indian Institute of Technology, Madras, and Technische Universitat Darmstadt, Germany
- Fracture in Iron
P Rama Rao, International Advanced Research Centre for Powder Metallurgy and New Materials (ARC-I), India
- Simulation of Plastic Deformation and Fracture of Metals
Masao Doyama and Y Kogure, Teikyo University of Science and Technology

contd....

The presentations highlighted the current status of research in New Materials and the necessity for stronger links between India and Japan. It is hoped that the proceedings of the India-Japan seminar on New Materials will be published in a special issue of the Transactions of Materials Research Society of Japan. A brief resume of the presentations is given below:

Prof. Suzuki (Japan) spoke on *Smart Hydrogels* and illustrated the developments in three dimensional polymer networks. Prof. Ayyub (India) made a detailed presentation on *Non-Linear Optical Response in Nanocrystalline Metals and Semiconductors*. He also spoke on Quantum confinement leading to Band Gap Engineering. Prof. Tokai (Japan) spoke on *Biomimetic Materials Processing and Nanotechnology*. His demonstration of transparent water repellent surfaces was appreciated. Prof. Subramanyam (India) spoke on *Highly Conducting Amorphous Phase of Carbon and effects of Intercalation*. Prof. Doyama (Japan) spoke on his last dream of building a *Transmission Positron Electron microscope*. Prof. Oda (Japan) spoke on *CMR Induced by Cluster Glass*. Prof. P Rama Rao (India) spoke on *Ductile Fracture* using pure iron as an illustrative material. He spoke on the mechanism of crack necking propagation which can lead to fracture. Prof. Nagakura mentioned how the Indo-Japan Cooperative Science Program has evolved from 1993. Prof. CNR Rao (India) spoke on *Making and Manipulating Nanomaterials through soft Chemistry* and gave a variety of examples of nanotechnology which are made from carbon and non carbon species. Prof. Koinuma (Japan) spoke on the *Innovative Concepts and methodologies of Materials Research*. Prof. Amit Jain (Japan) gave an account of *cluster and aggregate and ab initio calculations leading to a range of structures*. Prof. D Chakravorty (India) spoke on *Nanowires and Nano-Interfaces*. Prof. Miyamoto (Japan) talked about the *Integrated Computational Chemistry*, which could be used in a wide range of investigations. Dr. Shobhana Narasimhan (India) gave an account of *ab initio Studies of Metal Surfaces*. Dr. T Pradip (India) spoke on *Reactions of Nanomaterials, Sensors and Novel Materials*. Prof. Doyama (Japan) spoke on *Tensile Compressive Band Deformatives of Copper Crystals*.

The format of the India-Japan seminar enabled detailed discussions on various facets of New Materials.

S V Subramanyam

Materials for Rural Technology – A Report



MRSI members may recall the formation of a new subject group on ‘Materials for Rural Technology’. The activities of this subject group were launched at a session exclusively devoted to this topic in an international seminar at RRL, Bhubaneswar. The deliberations of this session were initiated by Dr. R Chidambaram, Chairman TIFAC and Past President of MRSI. As many as 14 papers were presented during this session. The theme and brief outcome of this seminar is given below.

A majority of the world’s population especially in the developing countries lives in rural areas. Technological inputs for rural areas will depend very much on local requirements and resources, level of human skills available, investment and employment potential etc. Thus, in any developing country like India, downsizing technology should be recognized as a key parameter for rural development. With the above mentioned concept in mind, the International seminar on ‘Downsizing Technology for Rural Development’, ISDTRD-2003 was held during 7-9 October, 2003 at RRL, Bhubaneswar. The seminar was timely and enabled government and non-government agencies to share their knowledge and experience on the subject. Regional Research laboratory, Bhubaneswar, Indian Institute of Metals and TIFAC, New Delhi organized the seminar. The areas covered in the seminar included agricultural implements, sustainable agriculture & horticulture, rural industrialization, materials and applications, food processing and preservation, rural energy and environment, water, health, sanitation, information & communication.

Dr. R Chidambaram, Principal Scientific Adviser, Govt. of India & Chairman, TIFAC chaired the seminar and Mr. Khuntia, Convenor ISDTRD-2003, Scientist, RRL Bhubaneswar, was the Co-Chairman.

Deepak Bhatnagar
Chairman, Subject Group on Materials for Rural Technology

Report on the Fourth Asian Meeting of Ferroelectricity (AMF-4)



The fourth Asian meeting of Ferroelectricity was held during, December 12-15 2003, at J.N. Tata Auditorium, Indian Institute of Science, Bangalore. The conference chair was Prof. S.B. Krupanidhi, while Prof. H.L. Bhat was the technical chair of the conference. Dr. J. Nagaraju undertook the responsibility of local organizations.

This conference is held every two years and this is the fourth in the series. Earlier three conferences were held in China, Singapore and Hongkong and were highly successful. The aim of the present conference was to give further thrust to the emerging area of smart materials and transducers dealing with the pyroelectric image sensing, remote sensing and PZT based actuators etc., which are great relevance to the space programme of the country. In addition, Smart Concepts have great potential for application in aircraft, helicopters, missiles, space vehicles and satellites, underwater systems, defence systems, transportation systems, bio-medical engineering, marine engineering, nuclear engineering etc. Major areas of possible applications are noise and vibration control, structural health monitoring, aerodynamic shape control, smart antennae, remote-controlled surgery, automatic flight control and bio-growth control etc. All the above applications are of great importance to ISRO, DRDO and others in the country.

The topics of interest to AMF-4 included;

- Theories and Fundamental Phenomena of Ferroelectrics
- Crystals and Ceramics
- Glass and Amorphous Systems; Nanostructures
- Optical Properties and Nonlinear Phenomena
- Integrated Piezoelectric/Electrostrictive MEMS
- Relaxor Ferroelectrics
- Ferroelectric Thin Films and Memory Devices
- Novel Materials and Experimental Techniques
- Ferroelectric Polymers and Composites
- Dielectric, Piezoelectric and Pyroelectric Properties
- Domains and Boundaries
- Surfaces, Interfaces and Defects
- Processing of Ferroelectric Materials
- Applications : Sensors, Actuators, Transducers, and Microwave Devices
- Electrooptics, Displays and Infrared Imaging
- High K-Dielectrics
- Ferroelectrics and Microelectromechanical Systems
- Energy Storage, Wireless Communications and Optical Data Storage
- Gate Dielectrics
- Nano Structure Ferroelectrics
- Ferroelectric Nanotubes
- Others
- Integrated Ferroelectrics on MEMS
- Graded Ferroelectrics
- Multiferroics

The conference attracted over 375 registered delegates from all over the world. There were 4 plenary lectures, delivered by Prof. L.E. Cross (USA), Prof. R.E. Newnham (USA), Prof. Yao Xi (China) and Prof. Denis Polla (USA), respectively. Two special lectures were delivered by Dr. V.K. Aatre (SA to Defence Minister, Govt. of India) and Prof. A. Bhalla (USA). In addition, 40 lectures were delivered by invited speakers. Contributed papers were presented both as oral and poster presentations. A concluding session was arranged where several experts expressed their views for subsequent meetings. The next meeting in the series is to be organized in Tokyo Inst. of Technology by Prof. Takenaka.

Several scientific bodies sponsored this meeting, which included Institute for Smart Structures and Systems (ISSS), IEEE-UFFC, USA, Asian Ferroelectrics Association (AFA), China and Materials Research Society of India, Indian Institute of Science, Bangalore- 560 012. Several funding agencies extended their financial support to the conference, which included DST, CSIR, AICTE, MIT, DRDO, NPSM, INSA and IEEE, USA.

The technical deliberations of the conference would be brought up in the form a refereed proceedings, in Ferroelectrics and also in Integrated ferroelectrics. Prof. S.B. Krupanidhi is the Guest editor and Prof. H L. Bhat and Prof. K.B.R. Varma will be the co-editors for Ferroelectrics and Integrated Ferroelectrics respectively.

S B Krupanidhi
Chairman, AMF-4

**APAM INDIA MEETING, 15th ANNUAL GENERAL MEETING & THEME SYMPOSIUM
ON LIGHT AND SMART STRUCTURAL MATERIALS**

**FEBRUARY 8-11, 2004, SWATANTRATA BHAWAN
BANARAS HINDU UNIVERSITY, VARANASI 221 005**

Tentative Programme

February 8, 2004		1400-1530 hrs : Medal Lectures (ML)
	Venue : Senate Hall of Swatantrata Bhawan	ML-1 : Dr. B D Malhotra, NPL, New Delhi <i>Current Trends in Materials for Biosensors</i>
1100-1300 hrs	: Registration for APAM & MRSI Meetings APAM India Meeting	ML-2 : Dr. A K Nandi, IACS, Kolkata <i>Polyaniline and Biomolecular Hybrid</i>
1500 hrs	: Introductory Remarks Prof. S.K. Joshi, President, APAM - India Chapter	ML-3 : Dr. D Basu, CGCRI, Kolkata <i>Role of Bio Inert and Surface Active Ceramics in Musculo-Skeletal Reconstruction Surgery</i>
1510 hrs	: APAM Activities Prof. S.V.Subramanyam, Secretary General, APAM	1530-1600 hrs : Tea
1520 hrs	: Address Prof.C.N.R.Rao, Past President, APAM	1600-1730 hrs : Medal Lectures (ML)
1530 hrs	: <i>Hydrogen Storage Materials and their Applications</i> Prof.O.N.Srivastava., BHU Varanasi	ML-4 : Dr. V Venugopal, BARC, Mumbai <i>High Temperature Chemistry of Plutonium Based Fuels</i>
1600 hrs	: <i>Materials issues for lowering cost of solar electricity</i> Prof. A.K.Barua, IACS, Kolkata	ML-5 : Dr. M Vijayalakshmi, IGCAR, Kalpakkam <i>Excitements in Electron Microscopy of Nuclear Materials</i>
1630 hrs	: <i>Materials for solid oxide fuel cells</i> Prof. K.T.Jacob, IISc, Bangalore	ML-6 : Dr. T L Prakash, C-MET, Hyderabad <i>High Purity Metals for Electronic Applications-Issues & Challenges</i>
1700 hrs	: Vote of Thanks Dr. B.K.Das, Secretary, APAM – India	1815-1900 hrs : Award Presentation & AGBM
1730 hrs	: MRSI Council Meeting	1900-2000 hrs : Evening Lecture Prof. CNR Rao, JNCASR, Bangalore
February 9, 2004		2000 hrs : Dinner
0830-0900 hrs	: Registration	February 10, 2004
0900-1000 hrs	: Inaugural Session of MRSI-AGM	0900-1200 hrs :
1000-1030 hrs	: High Tea	Theme Symposium (TS) on
1030-1130 hrs	: Distinguished Materials Scientist of the year Award Lecture Prof. T V Ramakrishnan, IISc, Bangalore / BHU, Varanasi	‘Materials for Light & Smart Structures’ Prof. P Ramachandra Rao, BHU, Varanasi
1130-1300 hrs	: MRSI-ICSC Annual Prize Lectures (i) Prof. Dhananjai Pandey, BHU, Varanasi (ii) Prof. S B Krupanidhi, IISc, Bangalore	TS-1 : Dr. D Banerjee, DMRL, Hyderabad TS-2 : Dr. U Ramamurthy, IISc, Bangalore
1300-1400 hrs	: Lunch	1030-1100 hrs : Tea TS-3 : Dr. A Gokhale, DMRL, Hyderabad TS-4 : Dr. K Madangopal
		1200-1300 hrs : Medal lectures (ML)
		ML-7 : Dr. B C Pai, RRI, Thiruvananthapuram <i>Discontinuous Aluminium Alloy Metal Matrix Composites: Past, Present and Future</i>
		ML-8 : Dr. RMVGK Rao, NAL, Bangalore <i>Polymer Matrix Composites (Meaning of High Performance)</i>
		1300-1400 hrs : Lunch
		1400-1530 hrs : Poster Session
		1530-1600 hrs : Tea

1600-1730 hrs : **Theme Symposium (TS)**
on **'Materials for Light & Smart Structures'**

TS-5 : Prof. O N Srivastava, BHU, Varanasi

TS-6 : Dr. S M Subba Rao, NAL, Bangalore

TS-7 : Dr. C Venkatesan, IIT, Kanpur

1745-1845 hrs : **Evening Lecture**

Dr. R A Mashelkar, DG-CSIR, Delhi

1900-2000 hrs : **Cultural Programme**

2000 hrs onwards : Dinner

February 11, 2004

0900-1100 hrs : **Medal Lectures (ML)**

ML-9 : Dr. B R Mehta, IIT, Delhi

Role of Surface Layers in determining the size-dependent properties of Nanoparticles

ML-10 : Dr. P Ayyub, TIFR, Mumbai

Understanding the size dependent of Physical Properties

For further information please contact :

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ML-11 : Dr. S K Mishra, NML, Jamshedpur
Self Propagating High Temperature Synthesis of Nano and Fine Borides & their Composites

ML-12 : Dr. B S Murty, IIT, Kharagpur
Novel Materials by Mechanical Alloying

1100-1130 hrs : Tea

1130-1300 hrs : **Poster Session**

1300-1400 hrs : Lunch

1400-1500 hrs : **Session on 'Materials for Rural Technology'**

(i) Prof. P Ramachandra Rao, BHU, Varanasi

(ii) Dr. Deepak Bhatnagar, TIFAC, Delhi

(iii) Dr. Sukomal Ghosh, NML, Jamshedpur

(iv) Dr. N Ramakrishnan, RRL, Bhopal

1500-1630 hrs : **Concluding Session**

1630-1700 hrs : Tea

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NOTICE

ANNUAL GENERAL BODY MEETING OF MRSI

The Fifteenth Annual General Body Meeting of MRSI will be held on **9th February 2004** at 1815 hrs at Banaras Hindu University, Varanasi.

The Agenda for the Meeting is as follows:

1. Welcome by the President, MRSI
2. Confirmation of the Minutes of the Fourteenth Annual General Meeting and action thereon
3. Presentation of the Annual Report for 2003
4. Report on International links of Materials Research Society of India
5. MRSI Publications-Report by the Editor
6. Award for the Best Paper published in Bulletin of Materials Science
7. Presentation of the Statement of Accounts for 2003
8. Election of Honorary Members
9. Venue for the Sixteenth Annual General Meeting of MRSI
10. Reconstitution of the Council for the period 2004-2007
11. Items from the members
 - GC Jain Memorial Prize Fund
12. Any other matter

Kindly communicate the details of the AGBM to all the members of MRSI

New Members

Enrolled between October 1 and December 31, 2003

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CALENDAR OF EVENTS, JAN 2004 – NOV 2004

January 8-10, 2004, XXXIII National Seminar on Crystallography, Dr. C G Suresh and Dr. Mohan M Bhadbhade, Joint Conveners, XXXIII NSC Office, Division of Biochemical Sciences, National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411 008, Tel: 020-5893034, Fax: 020-5884032, Email: nsc33@ems.ncl.res.in

January 12-16, 2004, Mechanical Behaviour of Systems at Small Length Scales, Prof. V Jayaram, Department of Metallurgy, Indian Institute of Science, Bangalore 560 012, Tel: 91-080-2932263, Email: qjayaram@metalrg.iisc.ernet.in, Website: <http://metalrg.iisc.ernet.in/~workshop/>

February 2-4, 2004, INDO-US Workshop on Tissue Engineering and Stem Cell Technologies, Workshop Secretariat, TEST 2004, BMT Wing, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Poojapura, Trivandrum 695 012, Kerala, Tel: 0471-2340801, Fax: 0471-2341814, Email: tst2004@scstimst.ac.in

February 9-11, 2004, 15th Annual General Meeting of MRSI, Prof. S Lele, 15th AGM-MRSI Secretariat, Department of Metallurgical Engineering, Centre for Advanced Study, Institute of Technology, Banaras Hindu University, Varanasi 221 005, Tel: 0542-2368174/236882/2368428, Fax: 0542-2368174/ 2369478, Email: mrsi2004@bhu.ac.in

February 9-28, 2004, SERC School on Methods in Materials Characterization, Dr. A K Tyagi, Materials Science Division, IGCAR, Kalpakam 603 102, Tel & Fax: 04114-280081, Email: akt@igcar.ernet.in

February 23-25, 2004, National Conference on Materials and their Applications (NCMA-2004), Prof. Nafa Singh, Convener, NCMA-2004, Department of Physics, Kurukshetra University, Kurukshetra 136 119, Haryana, Fax: 01744-238277, Email: physik@granth.kuk.ernet.in

February 26-27, 2004, Seminar on Recent Trends in Building Materials (RTBM 2004), Dr. Mohini Saxena, Convenor, RTBM-2004, Regional Research Laboratory (CSIR), Bhopal 462 026, Tel: 0755-2589827/25, Fax: 0755-2484323, 2587042, 2488985, Email: saxenamohini@hotmail.com *or* Dr. Amol Kumar Jha, Secretary, MRSI Bhopal Chapter, Regional Research Laboratory (CSIR), Bhopal 462 026, Tel: 0755-2485085, 2587609, Fax: 0755-2484323, 2587042, 2488985, Email: jhaamolkumar@hotmail.com

April 12-16, 2004, IUMRS ICEM, San Francisco, California, USA, details awaited

April 19-22, 2004, Workshop on Molecular Motors, Prof. Dr. Erwin Frey, Abteilung Theorie, Hahn-Meitner Institut, Glienicke Strasse 100, D-14109 Berlin, Fax: ++49-30-8062-2098, Email: frey@hmi.de

May 30-June 4, 2004, 3rd International Conference on Computational Modeling and Simulation of Materials and Special Symposium on Modeling and Simulating Materials Nanoworld, Climtec, P O Box 174-48018 Faenza-Italy, Tel: +0546 22461, Fax: +0546 664138, website: www.technagroup.it/modeling.htm

May 31-June 27, 2004, Workshop on Geometry and Materials Physics: Making the Connection. The Organizers are: Veit Elser (veit@lassp.cornell.edu), Randall Kamien (kamiens@physics.upenn.edu), Meigan Kerr (mkerr@wellesley.edu), Thomas Powers (Thomas_Powers@brown.edu), USA

June 14-18, 2004, International Conference on Mechanochemical Synthesis and Sintering, Prof. N Lyakhov, Institute of Solid State Chemistry & Mechanochemistry, Kutateladze 18, Novosibirsk 630 128, Russia, Tel: 7(383-2) 32 86 83, Fax : 7(383-2)32 28 47, Email: conf@solid.nsc.ru, Website: <http://www.solid.nsc.ru/MSS2004>

July 14-16, 2004, 2nd International Conference on Asian Consortium on Computational Materials Science (ACCMS-2), Novosibirsk, Russia, details awaited

September 13-17, 2004, The 2nd Biennial Symposium and Summer School on Nano and Giga Challenges in Microelectronics Research and Opportunities in Russia (NGCM2004), St. Petersburg, Russia Email: organizers@asdn.net

October 2004, Eleventh APAM Topical Seminar on Frontiers in Functional Materials, China, details awaited.

November 16-18, 2004, IUMRS ICA Taiwan, details awaited.

Members are requested to give information about the Conference / symposia / workshops they are organizing well in advance so that the same can be inserted in the “calendar of events”

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