



AND



**3rd International Conference on Materials for
Advanced Technologies (ICMAT 2005)**

**9th International Conference on
Advanced Materials (ICAM 2005)**

3 - 8 July 2005, Singapore

Organized by The Materials Research Society of Singapore

**SYMPOSIUM W: ADVANCED MATERIALS AND POLYMERS FOR DEFENSE AND
AEROSPACE APPLICATIONS**

Chair: Rohitkumar H. VORA, Advanced Polymer Research & Technologies, NJ, USA

Co-Chairs: Darren BERGAN, Office of Defense Cooperation, Office of Naval Research, USA
Kenneth GORETTA, Asian Office of Aerospace Research and Development
(AOARD-Tokyo), (AFOSR), Japan
LEE Kim Seng, DSO National Laboratory, Singapore
M. P. SRINIVASAN, National University of Singapore, Singapore

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Advanced Polymer Research & Technologies
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Scope of Symposium:

Advanced materials and technologies specially designed and developed for emerging defense and aerospace applications will play a vital role in maintaining security and world peace in the 21st century. This interdisciplinary symposium on defense and aerospace-related materials, to be held for the first time in the Asia-Pacific region, will cover state-of-the-art R&D relating to synthesis, characterization, fabrication, application and technology development. In the context of resurgent local economies, unfolding world events, and the strategic importance of the south-east Asian region, this symposium is very appropriate, relevant and timely. It would generate significant interest from the materials community and defense and aerospace R&D organizations worldwide, including governments (regional, developing and developed nations), academia and research institutes, defense contractors and industries. We expect the symposium to provide a forum for intellectually stimulating and engaging interactions among the major players. Contributions in the relevant areas of the topics listed below are welcome.

Topics of Interest:

High performance and smart materials

- High energy, and high temperature materials
- Shape memory alloys
- Magnetostrictive materials

Multi-compositional materials

- High performance composites (conventional, hybrids, Nanomaterials)
- Ceramers, polymers blends and materials alloys
- Low- and high-k materials, dielectrics, membranes and devices

Specialty chemicals and materials

- Adhesives, coatings, encapsulants, foams,

- Characterization, properties modification, adhesion, thermal stability, corrosion and Tribological aspects

- Novel processing methods

Materials application and technology in defense and aerospace

- High energy impact absorbents, projectiles,
- Cryogenic engines, ramjets, scramjets, turbines, reactors, rocketry/ missiles, aircraft, ships, submarines, satellites, transatmospheric vehicles (manned and un-manned) and launchers, and space structures, military hardware, energy conversion and

ICMAT Secretariat

c/o Institute of Materials Research and Engineering, 3 Research Link, Singapore 117602

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- membranes, fibers and fabrics
- Opto/electro and bioactive polymers
- Materials for surface modification, anti-fouling and camouflage
- Design, processing, Engineering and Characterization Methodology***
- Molecular and nano-level design, synthesis and processing/fabrication of advanced materials, polymers and devices, and structural reliability and testing methodologies
- storage, fuels and propellants technology, and propulsion systems
- Optical limiting, imaging, radar, microwave signature detection absorption and deflection
- Active camouflage
- Chemical and bio-warfare gears, sensors, protection
- Solar sails, stratosphere and outer space floating antenna and mirrors
- Aerospace food and medical engineering and technology

Keynote Speakers:

Herbert C. CARLSON, Air Force Office of Scientific Research (AFOSR), USA
Y-C (Charles). LEE Air Force Office of Scientific Research (AFOSR), Arlington, VA, USA
Bhakta B. RATH, Naval Research Laboratory/ONR, USA
S. SIVARAM, National Chemical Laboratory (NCL) Pune, INDIA

Invited Speakers:

M. J. ABADIE, University of Montpellier, Montpellier, FRANCE
R. BUETJE, European Aeronautic Defence and Space Company (EADS), GERMANY
T-S. (Neal) CHUNG, National University of Singapore (NUS), SINGAPORE
S. H. GOH, National University of Singapore (NUS), SINGAPORE
M. KAKIMOTO, Tokyo institute of Technology (TIT), Tokyo, JAPAN
G. LINDSAY, US Navy, NAVAIR laboratory, USA
D. LIKHATCHEV, University of Mexico, MEXICO
T. E. TAY, National University of Singapore (NUS), SINGAPORE
S. W. TSAI, Stanford University, USA
I.K. VARMA, Indian Institute of Technology (IIT) Delhi, INDIA

Scientific Committee:

M. J. ABADIE, University of Montpellier, FRANCE
T-S. (Neal) CHUNG, National University of Singapore, SINGAPORE
C. E. DORMAN, University of Alaska, USA
M. JACOBY, C&E News, ACS Publications, Washington D.C., USA
M. JAFFE, Medical Device Concept Laboratory (MDCL) NJ, USA
M. KAKIMOTO, Tokyo institute of Technology (TIT), Tokyo, JAPAN
G. LINDSAY, China Lake Naval Weapons Station, CA, USA
D. LIKHATCHEV, University of Mexico (UNAM), MEXICO
R. A. MASHELKAR, Council of Science and Industrial Research, New Delhi, INDIA
G. MEHTA, Indian Institute of Science, Bangalore, INDIA
K. L. MITTAL, J. Adhesion Science & Technology, Hopewell Junction, NY, USA
S.M. MOOCHHALA, Defence Medical and Environmental Research Institute (DMERI), SINGAPORE

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C. K. OBER, Cornell University, NY, USA

B. B. RATH, Naval Research Laboratory, Dept of Navy, Washington DC USA

A. L. RUSANOV, Academy of Science of Russia, Moscow, RUSSIA

S. SIVARAM, National Chemical Laboratory, Pune, INDIA

I. K. VARMA, Indian Institute of Technology (IIT) Delhi, INDIA

Proceedings:

A peer-reviewed volume of proceedings of selected technical papers presented at Symposium W will be published.

SCHEDULE AND IMPORTANT DEADLINES

SYMPOSIUM W (Only)

Abstract Submission Dateline

January 31st 2005

Notification of Acceptance of Paper for ORAL or POSTER Presentation

February 28th 2005

Receipt of FULL MANUSCRIPT

July 4th 2005

Notification about Technical Paper Presentation Guideline (PowerPoint) and requirements

April 2005

Notification of Acceptance of Manuscript for the Proceedings

September 30th 2005

Selected, refereed papers from the Symposium W will be published as a Special Bound Proceeding Book. The special Proceeding Book will be mailed to all 'Primary registrant' in Symposium W, towards the end 2005 or early 2006.

Sponsors:

Office of Naval Research (ONR), Dept of Navy USA

Air Force Office of Scientific Research (AFOSR), USA

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