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**Proceedings of the International
(Russia-US) Workshop
"Mechanics of Advanced Materials"
(St. Petersburg, Russia, August 2-4, 2006)**

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Reviews on Advanced Materials Science provides an international medium for the publication of reviews, topical issues and international conference proceedings in the area of theoretical and experimental study of advanced materials. Focuses are placed on, but not limited to nanostructured materials, semiconductors and materials for hydrogen economy. We encourage prospective authors to correspond with the Editor-in-Chief before submitting a review article. Proposals should include an outline with key citations. All papers submitted will be rigorously peer-reviewed prior to publication. **Reviews on Advanced Materials Science** is published in both paper and electronic versions.

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PREFACE

The International (Russia-US) Workshop "Mechanics of Advanced Materials" (St. Petersburg, Russia, August 2-4, 2006) provided a dynamic overview of current and future multidisciplinary research on structural mechanics of deformation and fracture processes in nanostructured materials, multi-scale mechanics of fracture in solids, and structural mechanics of materials for hydrogen economy. Particular emphasis was placed on developing close interactions among Russian and US scientists and engineers, and fostering future transdisciplinary and multi-institutional collaboration in these new and rapidly growing areas. Such interactions and collaborations are expected to have broad and long-lasting impact on the research field and on the Russian-US cooperations.

This workshop aimed to assess the current status and identify future priority directions of collaborative research in mechanics of advanced materials with unique mechanical properties for structural applications and hydrogen economy, thus enhancing the science and development of these novel materials. The Workshop was a unique forum for promoting Russian-US collaborations and there has been no such meeting in the past in this subject area.

This issue of Reviews on Advanced Materials Science (RAMS) Journal contains selected papers presented at the Workshop. This issue will be of interest to researchers and graduate students in the field of materials mechanics.

The support of the International (Russia-US) Workshop "Mechanics of Advanced Materials" by National Science Foundation (USA), Advanced Study Center (Russia), Institute of Problems of Mechanical Engineering (Russia), and Russian Foundation of Basic Research (Russia) is gratefully acknowledged.

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