

“Materials Education for the 21st Century Workforce”

Opening Remarks By Aris Christou

This conference will help establish the educational needs in materials science for the 21st century and our program focuses on all aspects of materials education including K-12, undergraduate and graduate education and continuing education. The conference will therefore help define the educational needs for the 21st century workforce.

The conference will be in six areas which have been selected by our organizing committee:

The changing undergraduate and graduate materials curriculum (including issues related to accreditation and continuous improvement),

Programs to enhance K-12 education in materials and technology,

Continuing education and the role of the community colleges, and education for the non-materials professional, the national infrastructure for research and development,

Meeting the needs of industry in metals, metallurgy, microelectronics and soft materials.

The venue of the conference includes invited presentations covering the above topics, and panel discussions with recorded recommendations to be developed by each session.

The steering committee has worked hard to select appropriate speakers so that a meaningful discussion of the six areas could be developed. Financial support from the National Science Foundation, the Air Force, ASM and TMS was attained in order to bring invited speakers to the conference, to support publication of the workshop results, and to support the attendance of secondary school students and their mentors. A truly innovative session is to conduct a “materials mini camp” to be carried out concurrently during the conference with the participation of high school teachers and their teachers. We will witness “materials outreach” at work. You will hear more about this shortly.

This conference we feel has national importance since materials education is critical in advancing technology and enhancing the nation’s economy, security and health. We expect that the conference will be cutting edge and these special discussions will help to address the

current and future roles of materials in information technology, health and biotechnology, national security, energy and the environment.

Recent Meetings on Same Subject

This meeting is a follow up of the 2002 meeting sponsored by FMS and supported by the National Science Foundation on Materials Education for the 21st Century. A number of key recommendations resulted from this meeting including the emphasis on K-12 activities among the professional societies. The educational committee of FMS has spent the last two years organizing these outreach activities especially with respect to secondary school science teachers. We have sought to make teachers aware of the broad range of educational tools involving materials which are now available from the professional societies.

Other related conferences have included the 2000 NMAB Forum on “Materials in the New Millennium, Responding to Society’s Needs”. This meeting addressed four key themes: the critical role of materials in advancing technology, the industrial and societal needs that require materials development, materials research areas with the greatest potential in meeting these needs, and federal and industrial initiatives that can help the materials community.

TMS in March of 2004 held a mini symposium on materials education related topics.

The TMS Public and Governmental Affairs Committee and the TMS Education Committee are co-sponsors of this symposium, as part of the Annual Meeting dedicated to Building MSE Synergies

Chairperson and Organizing Committee

I want to thank the organizing committee and Betsy Houston for her outstanding work in organizing the conference

Iver Anderson

Slade Cargill

Carolyn Garvey

Charles Hayes

Alan Hurd

Ernest Levert

Toni Marechaux

Eric Packenham

David Richerson

Jud Ready

Alex Scott

Dan Steinberg

Betsy Houston, Executive Director of FMS

Organization and Conference Format

The venue of the conference and includes the invited presentations covering the above topics, panel discussions with recorded recommendations. Each of the planned six sessions has three invited speakers, who will present their views through twenty minute presentations. The three speakers will be joined by a discussion leader and rapporteur for a panel discussion. The recommendations from each panel will be recorded and presented at a final summary session.