



## Editorial

We are proud to present here a collection of excellent papers given at symposia of the Advanced Materials Science Committee of the International Academy of Astronautics.

One goal of this committee is to facilitate international collaboration in advanced materials science utilizing special environments, such as those available in orbiting spacecraft and on large centrifuges. Consequently, this special volume of *Acta Astronautica* contains papers on the influence on materials processing of microgravity, accelerations up to 1-million  $g$ , fluctuations in acceleration, the vacuum of space, free surfaces, and baffles in liquids. The processes investigated include film deposition, polymerization, diffusion and sedimentation measurements, welding, solidification, and solution crystal growth.

Another goal of the Advanced Materials Science Committee is to clarify the role of the scientist in materials research in orbiting spacecraft, particularly the International Space Station. Sessions were held on this topic at the 1999 International

Astronautical Congress in Amsterdam, and at the 2000 Congress in Rio de Janeiro, and will be held at the 2001 Congress in Toulouse and at the 2002 World Space Congress in Houston.

In furtherance of the two goals above, the Committee has pioneered the utilization of the Internet for globally interactive symposia in Amsterdam and Rio (see <http://cybermedia.uh.edu/svec/>). This permitted real-time participation in these sessions at sites around the world.

I wish to thank the authors of the papers presented herein as well as the participants in the Symposia of the Committee.

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