

EDITORIAL

The global economy lives a period of great apprehension regarding energy issues for the near future. The developed countries continue to have a steady growth and the emerging countries increase their rates of economic growth, which causes a continuing increase in global energy demand. In that context, **RETERM** calls the attention of the readers to the growing need for the search of alternative energy sources to the current oil based global economy. This effort certainly involves focus and work of the energy related scientific community, field in which *Thermal Engineering* is part of. There are several alternatives currently under consideration. The Department of Energy of the United States of America is currently seriously focused on research and development of alternative energy sources, mainly aiming the independence of external suppliers, such as nuclear energy and the hydrogen economy. Therefore, it is vital to any nation the allocation of financial resources to the development and technological control of new processes that lead to self-sufficiency in energy generation for internal consumption and economic growth. The fuel cell systems will be of critical importance in the possible hydrogen economy scenery for the near future, and they are at the forefront of the emerging technologies for electric power generation for stationary, mobile and portable applications. The high energy conversion efficiencies, extremely low onsite environmental pollution and noise are among their major advantages in comparison to other systems. However, there are major technological and economic hurdles to be overcome prior to their large scale practical implementation. Similarly to nuclear technology, in fuel cell technology it is observed that each research group develops its own know-how independently and with little exchange of information.

In this fifth number, we continue to publish the best articles written in English language, presented at the 9th Brazilian Congress of Thermal Engineering and Sciences, ENCIT 2002, held in Caxambu, MG, from October 15th to 18th, 2002, that were selected by the Associate Technical Editors of **RETERM**, according to the scientific criteria of the journal. The idea is to increase the industrial and scientific impact of the research results presented in the Congress. Additional articles that have been submitted and reviewed in the regular **RETERM** publication process are also included in the current issue.

The institutional support from the Brazilian Society of Industrial Machinery and Equipments (ABIMAQ), continues to strengthen our belief in the success of this enterprise. To open a perspective to the maintainance and continuity of **RETERM**, we invite the readers from the industrial community to contact our staff for subscriptions and publicity in **RETERM**.

For the next issues we continue to welcome technical articles from both the scientific and the industrial communities to either section of **RETERM**, contributions to the other sections of the journal, and suggestions for new sections as well. We also welcome response and comments from our readers that will certainly help the success of **RETERM**.

Technical Editor
Associate Technical Editors