



Guest Editorial

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This issue of *Advanced Performance Materials* covers some of the structural materials research and development activities in Korea, conducted at the Korea Institute of Machinery and Materials (KIMM) and the Center for Advanced Aerospace Materials (CAAM).

To promote the basic and applied research in the areas of technical and economic importance to Korea, Korean government operates several research and development organizations. Ministry of Science and Technology (MOST) funds most of these government sponsored national research institutes such as KIMM. MOST also supports the selected university based research institutes such as CAAM through the Korea Science and Engineering Foundation's Center of Excellence program.

Since its foundation in 1976, KIMM has been playing a major role in leading the Korea's materials research and development activities. KIMM currently has a staff of about 600 in two sites, Daeduk and Changwon. Its major mission is R&D on advanced structural materials, testing and evaluation of materials, parts and industrial facilities, and technical assistance to industries. KIMM is playing a major role in Korea's Fighter Program and is currently the certifying institute authorized by Rolls Royce, Pratt and Whitney, Bell Helicopters on the materials and parts manufactured by Korean industries for use in F-16 aircraft.

KIMM (Changwon), as a national R&D center for advanced materials technology, concentrates on the structural materials and parts for transportation vehicles. It is conducting researches on advanced materials such as composite materials, light weight and high strength materials, high temperature structural materials, superconductors, and structural ceramics. Materials processing technologies are also pursued, such as advanced powder processing, rapid solidification, self-propagating high temperature synthesis, mechanical alloying, precision forming and machining, and post processing such as thin film deposition and surface modification. It is also doing the test and evaluation technologies providing materials evaluation, objective judgement on the quality and performance of various products such as aero-parts, petrochemical industries, manufacturing equipment, and atomic power plants components inspection.

CAAM, founded in 1990, became one of the nationwide inter-universities Engineering Research Center of Excellence supported by the Korea Science and Engineering Foundation (KOSEF). CAAM is headquartered at the Pohang University of Science and Technology (POSTECH), a premier research-oriented university in Korea founded by the Pohang Iron and Steel Company, Ltd. CAAM is currently composed of about 150 staff members from 14 universities. In addition, researchers from several research institutes and industries are involved in the research projects. CAAM has four research divisions: light weight materials, high temperature materials, composite materials, and process development/characterization.

The main intent of the Center for Advanced Aerospace Materials (CAAM) is to concentrate on the development of new classes of advanced structural materials needed for the transportation industry, including aerospace and automotive manufacturing. With an equal emphasis on the fundamental and applied research, CAAM has maintained strong ties with the related industries and research institutes resulting in a significant leveraging of basic and applied materials science and engineering. CAAM also offers the master's and doctoral programs in materials science and engineering, and trains engineers through post-university education.

Recently, KIMM and CAAM formed the Aircraft Materials and Parts Research Institutes Association (AirMAP) with the Regional Research Center for Aircraft Parts Technology of the Gyeongsang National University to promote the growth of Korea's aircraft industries.

The papers in this issue of Advanced Performance Materials are only some examples of work conducted at KIMM and CAAM. Further information can be obtained by writing to the institute of interest.