Name of the Plenary Speaker: Terence G. Langdon

Affiliation : University of Southampton, U.K.

Short Biography:

Terence G. Langdon graduated in Physics from the University of Bristol and obtained a Ph.D. in Physical Metallurgy from Imperial College, University of London. Following post-doctoral appointments at the University of California Berkeley, the University of Cambridge and the University of British Columbia, he was appointed to the faculty of the University of Southern California where he stayed for more than 40 years. He retired from USC in 2012 as William E. Leonhard Professor of Engineering Emeritus, returned to the U.K. and was appointed Professor of Materials Science at the University of Southampton. He was awarded a D.Sc. in Physics by the University of Bristol and received honorary doctorates from the Russian Academy of Sciences and Peter the Great Saint Petersburg Polytechnic University. He is a Fellow of The Royal Academy of Engineering and The European Academy of Sciences, a Foreign Academician of the Academy of Sciences of the Bashkortostan Republic and a Member of Academia Europaea. He is a Fellow of ASM, TMS, MRS, AAAS, the American Ceramic Society, the Institute of Physics, the Institute of Materials, Minerals and Mining and an Honorary Member of the Japan Institute of Metals. He has received numerous awards including the Blaise Pascal Medal from the European Academy of Sciences, the Lee Hsun Award from the Chinese Academy of Sciences, the Honorary Medal "De Scientia et Humanitate Optime Meritis" from the Academy of Sciences of the Czech Republic, the Senior Career Award from Brazil, the Sōmiya Award from IUMRS and the Acta Materialia Gold Medal. He also received the Henry Marion Howe Medal (ASM), the Albert Sauveur Achievement Award (ASM), the Oleg D. Sherby Award (TMS) and the Alexander Zhilyaev Award (ICSAM). He is listed on Google Scholar with more than 100,000 citations and an h-index of 152.

Title of the plenary lecture: Recent advances in using severe plastic deformation to process nanomaterials

Abstract of the plenary lecture:

It is now well established that advanced structural materials have the potential to exhibit significantly improved mechanical properties by reducing the grain size to the submicrometer or nanocrystalline range. Research shows this may be achieved most easily through the application of severe plastic deformation (SPD) in procedures where high strains are imposed on the materials but without any significant changes in their overall dimensions. Examples of these experimental techniques include equal-channel angular pressing, high-pressure torsion, accumulative roll bonding and tube high-pressure shearing. These techniques are examined with a special emphasis on the properties of the processed materials. Recent developments in the processing of hybrid materials are also reviewed and it is demonstrated that these hybrids provide a potential for making significant advances in the production of new structural materials