



## Guest Editorial

Organising this special issue and the related meeting on 10th & 11th April 2008 to celebrate Professor Sir Richard Brook's 70th birthday has given me immense pleasure for at least three major reasons. Firstly, to honour and toast the achievements of an internationally leading great "son of ceramics" is a very rare privilege. Secondly, it has been delightful to invite and liaise with the *crème-del-la-crème* of the international ceramics community to compile this special issue. Thirdly, as a member of our World Academy, it has given me great pleasure and satisfaction to admire the fascinating developments that have taken place in Ceramic Science and Engineering in the last 50 years, as written and presented by the experts contributing to this special issue. I can truly say that it is a very special issue to which so many scholars wanted to contribute, we had to limit the contributions to about two dozen, but in an ideal world we would have had 22 dozen papers!

This guest editorial will be incomplete without a brief resume of the very illustrious career of the person it seeks to honour. Professor Sir Richard Brook is currently Editor-in-Chief of the Journal of the European Ceramic Society (JECS) and has been associated with the editorial boards of numerous journals; both ceramics and the wider remit of materials. A native of Leeds in the United Kingdom, Richard Brook, graduated from the University of Leeds in 1962 with a degree in Ceramics. He then obtained a ScD degree in 1966 from the Massachusetts Institute of Technology in Boston, USA, and took a post as an Assistant Professor of Materials Science at the University of Southern California in Los Angeles. In the late 1960's Professor Richard Brook returned to Britain to join the Atomic Energy Authority at Harwell. Three years later he became Head of the Department of Ceramics at Leeds University and taught me and many others who have contributed to this special issue (e.g. Binner, Harmer), ceramics and materials science at the masters and doctoral level. He took my ceramics science lectures when I was reading for my MSc in Exploitation of Materials at Leeds University and he never used any notes or overheads, facts and figures on the subject just seemed to ooze out of him! In 1988, Professor Brook joined the Max Planck Materials Research Institute, in Stuttgart, Germany, as Director, before again returning to Britain to take up the Cookson Chair of Materials Science at Oxford University where he became Head of Department in 1993. In 1994 he took on the role of Chief Executive of the Engineering and Physical Sciences Research Council (EPSRC), whose major role is to support the research activities of British Universities' scientists and engineers and their masters or doctoral students. He

made the EPSRC *modus operandi* more transparent and accountable and the procedures he started are being continued even 6 years after his departure. Having completed a record 7-year stint as the Chief Executive of EPSRC, in 2001 he took up the Directorship of the Leverhulme Trust, which he currently holds. Overall, Professor Sir Richard Brook was a man of vision and in each of his occupations clearly demonstrated the need for reform, change and modernisation aptly elucidating the well known words of Solomon: "Where there is no vision, the people perish." **Proverbs 29:18** (KJV of the Bible).

Materials are central to both the physical and life sciences, including engineering and medicine. The papers contained in this special issue give tremendous insight into the rapid developments in ceramic science and engineering in the last 50 years, which has witnessed ceramics move from a more traditional material to an engineering material with a distinct market niche. Ceramics, or indeed any type of material, can be studied scientifically in the context of composition  $\leftrightarrow$  processing & forming  $\leftrightarrow$  microstructure  $\leftrightarrow$  properties, the golden and distinctive rule of materials science & engineering. This is why our discipline is so research-rich and indispensable to other disciplines, notably traditional types of engineering. Over the last 50 years ceramic science and engineering research has moved from a discipline which rather stagnated on microstructure and properties to adventurous explorations on processing and forming. The paper in this issue by my "guru" Professor Julian Evans provides ample ammunition for this statement. Seventy ways to make ceramics (a fitting match to honour the 70th birthday of Professor Sir Richard Brook) gives a mouth-watering account of both traditional and modern ceramics processing and forming activities. Indeed over 30% of the papers in this special issue are dedicated to the topic of ceramics processing and forming.

It was Sir Richard's wish that both senior and junior colleagues contribute to this special event (which will also have three other oral-only presentations in addition to the papers in this issue) and the contributors to this issue were chosen with this fact at the heart of the planning. The papers in this issue by Best, Boccaccini, Dorey and Yeomans on Bioceramics (a rapidly evolving class of medical material), Electrophoretic Deposition, Electronic/Electrical Ceramics and CMCs, respectively, from four UK academics comply with Sir Richard's wish admirably. Alongside, in this issue we have plenty to savour from the "senior class"—Lange, Claussen, Heuer, Anthony Evans, Freer, Lee, etc. and also a lecture at the meeting by Manfred Rühle. There are papers on both dense and porous ceramic materials in this

issue; in fact the paper by Colombo engineers the latter. In this issue, glass (Hampshire) is not forgotten and Xiao Guo gives us a peep to the future with a paper on materials and energy. In fact, this issue contains a gold-mine of information for the ceramics connoisseur to reflect on and the budding ceramics scholar to dive into and perhaps uncover more.

Last, but not least, I want to finish by thanking our sponsors, EPSRC and Elsevier, and also the ever so dedicated and hardworking Dr Emma Leighton of the Centre for Materials Research at University College London who has organised the putting together of this special issue and the accompanying meeting. Finally, to Professor Sir Richard Brook—a personal sincere

thank you from me, Sir, without people like you, the world and indeed the ceramics community is much the poorer. Long may your efforts and guidance to the community continue.

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