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## Editorial

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**Biographical notes:** David J. Whitehouse is Emeritus Professor of Engineering Science at the School of Engineering, University of Warwick, UK and Metrology Consultant to Taylor Hobson (Ametek) Leicester Ltd., UK. He has published over 250 technical papers, 23 patents and six books including the Handbooks on Surface Metrology and Surface and Nanometrology. He has been cited by ASPE as the 'Father of digital metrology' and he founded the first journal in the world on nanotechnology, namely 'Nanotechnology' which now has an impact factor of 4. He was Chief Research Engineer at Taylor Hobson before becoming Chief Scientist at the School of Engineering at the University of Warwick.

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Everything is changing concerning surfaces and their measurement; from the surface itself to its metrology, and from the manufacture of the surface to its use. In recent years the surface has taken on a more important role. This has been due partly to the advent of miniaturisation and partly to the need to cut costs and to improve performance. This and the previous issue of the Journal seek to demonstrate these effects by means of a few papers by some of the world's chief exponents of the subject. The coverage is not complete but it is hoped that the messages in the publications and the references in them will be sufficient to give a background from which further investigation will be possible.

For the first time, form and texture have taken on a role independent of the size of the component. This shift from the traditional is due to new manufacturing methods and the realisation that adding value to the product is best achieved by means of optimising surface properties and effects. These changes and aspects involving the increasing use of mathematics and physics in metrology are discussed in the earlier issue.

In this issue the first paper reviews the general role of surfaces and where they fit today in terms of the manufacture and performance. The second paper is a comprehensive investigation into the practical uses of surfaces including applications of the newer generation of structured surfaces. The next two papers widen the scope of the subject matter in these two issues to include the design aspect prior to manufacture and the effects of machining not only on the surface topography but also the subsurface: both fundamental to correct usage and long life of the product. The last two papers examine aspects of the procedure deemed necessary to ensure that the data obtained from the

surfaces is significant, sufficient and reliable enough to be incorporated into quality control. In addition, self calibration is demonstrated in the first of the papers and the use of simulation to assess uncertainty in the second.

I thank Professor Venkatesh and the distinguished authors for giving me the opportunity to reveal, in these two special issues some of the key changes which are taking place in this fascinating and important subject. These changes embody the future of surfaces and their metrology.