Mott's Physics

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PREFACE

Mott's Physics

This issue of *Journal of Physics: Condensed Matter* is dedicated to Sir Nevill Francis Mott (1905-1996), whose research on amorphous semiconductors, metal-insulator transitions, polarons, bipolarons and high-temperature superconductors has had tremendous impact on our current understanding of advanced materials.

The issue presents some aspects of Mott's physics in molecular, semiconducting and superconducting nano-scale and bulk materials. It opens with a historical tribute to Sir Nevill's life in science by Ted Davis and a comprehensive overview by Alex Müller of contemporary experimental results in high-temperature superconductors, substantiating ideas by Mott *et al.* of bipolarons in these fascinating materials (*Nature*, **327**, 185 (1987)).

The papers in this issue offer reviews and new developments by some leading researchers actively working in relevant fields, as presented at the European Science Foundation (ESF) exploratory workshop 'Mott's Physics in Nanowires and Quantum Dots' (31 July–2 August, 2006, Gonville and Caius College, Cambridge) supported by the Engineering and Physical Sciences Research Council (EPSRC) and Loughborough University, UK.

Sasha Alexandrov
Guest Editor