Silicon Light Emitting Diodes

Abstract

Crystalline silicon is an indirect semiconductor and therefore efficient light emission has been long considered impossible. Nevertheless, were efficient light emission made possible then many important applications, for example in microelectronics and optical communications as well as others arise.

In this talk the applications and need for silicon light emitting devices are discussed and ways to achieve this shown. In particular the use of a new technology, dislocation engineering, will be described. Key to this technology is its complete compatibility with standard silicon processes for device and chip manufacture.

Short Biography

Kevin Homewood is Professor of Semiconductor Optoelectronics, in the Department of Electronics, within the School of Electronics and Physical
Sciences; a department he joined as lecturer in 1984. The department received the highest 6* research rating in the last government research assessment exercise. Kevin’s current research interests are in developing the areas of synthesis, characterisation and new devices in novel silicon based materials of potential strategic importance for applications in the microelectronics, computing and communication industries. He has published around 140 papers in these areas. He is also a contract holder of the national UK Ion Beam Centre based at Surrey.

***** All Interested are Welcome *****

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