



Hybrid GaN/organic optoelectronics

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Specialised micropixel gallium nitride light-emitting diodes offer attractive characteristics for integrated photopumped lasing, self-aligned microstructure fabrication and colour conversion in soft materials. In this talk, we will review the use of these devices for such applications, utilising such materials as nanocomposites and organic semiconductors. In particular we will focus on colloidal quantum dots and fluorene-based polymers and nano-sized oligomers. When embedded in or blended into suitable polymer matrices, these are amenable to various forms of micro-patterning for integration with the GaN, including such methods as ink-jet printing. We will also discuss photopumped lasing in such organic structures.

Martin Dawson is Director of Research at the University of Strathclyde's Institute of Photonics. He took both his B.Sc. and PhD degrees in Physics at Imperial College London and worked subsequently in the United States and at Sharp Laboratories Oxford before coming to Strathclyde in 1996. He is well known for his work on both nitride semiconductors and various forms of photopumped lasers, in particular semiconductor disk lasers. He holds Fellowships of the Royal Society of Edinburgh, Institute of Physics, Optical Society of America and the IEEE.