

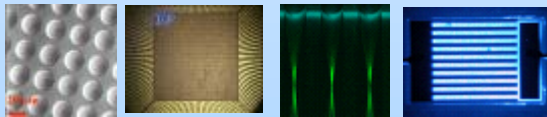


**EPSRC** Engineering and Physical Sciences  
Research Council

## A Thousand Micro-Emitters per Square Millimetre: New Light on Organic Materials and Structures



This £2.7M project, from July 04 to October 08, developed novel micro-sized, solid-state light projectors, customised for a variety of applications. 4 Universities, 8 research groups, 40 researchers and students, produced dozens of papers and presentations and patents.



### Micro LED Arrays

#### Achieved:

- Ultraviolet, blue and green emitters
- Up to 128 by 96 elements, to date
- Typically 20 micron dots on a 30 micron pitch
- Individually addressed elements
- Integrated CMOS driver
- Generation of red, green, blue and white light from light emitting polymers (LEP) stimulated by the UV LEDs
- 10's of microWatts per element
- Microlens arrays in polymer or diamond
- Ring, dot or striped emitters
- More than 1000 emitters per square millimetre

#### Benefits

- Fast switching speed
- High efficiency
- Ultra compact
- Good beam quality
- Enables new devices

#### Applications

- Micro displays
- Optical biochips for sensing or DNA growth
- Structured light source for microscopy
- Printing and lithography

Further detailed information:  
<http://bt-onethousand.photonics.ac.uk>

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