

## Structured illumination for 3D microscopy

*By Mark Neil*

Conventional optical microscopy suffers most notably from out-of-focus blur that degrades contrast and makes it difficult to visualise the 3-dimensional nature of the specimen. One way to overcome these problems is to use some form of structure in the light that illuminates the object, be it as a point in confocal microscopy or a wide-field grid pattern in grid projection methods.

The structure in the image attenuates in the out-of-focus light and hence enables optically sectioned images to be obtained and the 3-dimensional nature of the specimen to be elucidated. A further feature of these approaches is that the resolution of the images obtained can be enhanced relative to the conventional image.

A review of various methods will be presented highlighting their own advantages and disadvantages.