HIGH PRECISION MICROSCOPE: Seeing cells in very fine detail

SIX months ago, three engineers from Seattle arrived at the Institute of Medical Biology (IMB) to assemble a ground-breaking piece of equipment: the DeltaVision OMX V4.

It is a super resolution microscope with capabilities which go beyond what was technically thought possible. Surrounded by a heavy, bulky machine to reduce vibrations and temperature variations, the microscope has three individual lasers and three cameras to produce 3-D structural illumination of sub-cellular levels, allowing scientists to see eight times smaller details than the next best microscope.

The first of its kind to be installed in the world, the high precision microscope provides clarity and fine detail of cell biology that scientists were able to only guess at before: extreme close-ups of cell structures like the nucleus, its sub-structures, and surrounding filaments.

"It allows you to go to the basic information much faster," says IMB senior research fellow Dr John Common, "and there's the excitement of seeing things people haven't seen before."

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