



中国科学院生物物理研究所

贝时璋讲座

A revolution in cryo-EM: beauty and benefits of nanobiology in life science

报告人：Peter J. Peters

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主持人：徐涛研究员

报告人简介

Peter Peters obtained his PhD in 1991 from Utrecht University, where he co-developed the cryo-immunogold EM method. Using this technique, he discovered the 'MHC class II antigen loading compartment' and established that secretory granules in cytotoxic T cells are of lysosomal nature. At the National Institutes of Health in Bethesda, he identified ARF6 as a regulator for endocytosis.

In 1998, Peters was appointed professor at the Netherlands Cancer Institute in Amsterdam. His team discovered that *Mycobacterium tuberculosis* translocates via a 'type VII secretion system'—dependent fashion from the phagosome to the cytosol. He also co-developed with Hans Clevers the human organoid cell culture starting from single stem cells. Additionally, he initiated and coordinated the 'Netherlands Centre for Nanoscopy,' with two Krios cryo-EMs (www.necen.nl).

In 2014, Peters was appointed as distinguished professor at Maastricht University, where he co-directs the Maastricht MultiModal Molecular Imaging Institute (M4I), www.maastrichtuniversity.nl/m4i. His team is studying the near-atomic structure of the type VII secretion system using single-particle cryo-EM and cryo-electron tomography. For this, they are co-developing high precision, cryo-focused ion beam sample preparation guided by correlative cryo-fluorescence microscopy. His team also is developing the next-generation Vitrobot.

