

1st European Crystallography School

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Reinforcing foundations
to build the 2nd century of modern crystallography



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Nobel Prize in Chemistry 2009
for studies of the structure and function of the ribosome

The use of recent advances in electron microscopy to study ribosome structures

For the last hundred years, the main technique to determine the atomic structures of molecules has been X-ray crystallography. Recently, advances in both detectors and algorithms for data analysis has made it possible to reach ~3 Å resolution using single-particle electron microscopy. This has for the first time made it possible to obtain atomic models of large macromolecules without the use of crystals and with very small amounts and heterogeneous samples. I will discuss how my laboratory has used these advances to determine an atomic model for the large mitochondrial ribosomal subunit de novo.

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