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# Recent advances in Electron Energy Loss spectroscopy and their application to nanocarbon systems

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**Venue: Faculty of Engineering Bldg. 2, 7F, 73C2**

### Abstract:

In this tutorial I will present an overview over the current state of the art in high resolution Electron Energy Loss spectroscopy (EELS). EELS is a very powerful tool as it combines studies of site selective core level excitation spectroscopy with momentum dependent optical spectroscopy including interband plasmons as well as free charge carrier plasmons. In addition, it also covers low energy excitations like phonons and charge density waves and their dispersion relation. I will shortly introduce different types of EELS spectrometers and the physical concept of the loss function and will then focus on the recent and very rapid developments in performing high resolution EELS inside a transmission electron microscope on the example of nanocarbon systems.

