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Visions for following the fate of nanoparticles in cells via synchrotron radiation

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In the context of biological environment nanoparticles are hybrid materials, which apart from the "bulk" particle also involve the corresponding surface chemistry and a corona of adsorbed molecules from the environment, such as proteins [1]. Upon cellular internalization the nanoparticles may degrade into their individual parts [2]. This process can be followed by using radiotracers [3], fluorescence [4], and mass spectroscopy [5]. Furthermore adsorption of proteins can be probed by fluorescence correlation spectroscopy [6] or nuclear magnetic resonance [7]. It will be discussed how such experiments could be also investigated using synchrotron radiation.

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Primary author: Prof. PARAK, Wolfgang J. (Universität Hamburg)

Presenter: Prof. PARAK, Wolfgang J. (Universität Hamburg)