PhD Studentship in carbon nanotube growth

A research studentship is available in the area of carbon nanotube growth mechanisms in the ESCA group of Professor P. Oelhafen, at the Physics Institute of the University of Basel, Switzerland.

The degree of growth control necessary to fulfill the huge potential of carbon nanotubes (CNTs) for a big number of applications requires a deep knowledge of the factors involved in the carbon nanotube chemical vapor deposition (CVD) growth process. According to our previous work, the chemical state of the catalyst particles is one key factor. The candidate will investigate the combined influence of chemical state and catalyst morphology, using pre-engineered catalytic particles with defined diameter, composition and spatial ordering prepared with micellar techniques. To in situ studies of catalyst chemical composition using photoelectron spectroscopy techniques she/he will additionally investigate the feedstock gas decomposition, as a mean to determine the kinetic paths involved in the catalytic process. Additionally, the crystalline shape and orientation of the particles with respect to the substrate will be investigated.

The candidate may have access to a variety of characterization techniques (photoelectron spectroscopy, optical spectroscopy, quadrupolar mass spectrometry, ellipsometry, SEM, AFM) and plasma technologies.

Your profile: the position requires completed degree in physics or chemistry. The successful candidate will be highly motivated with good theoretical and experimental skills. Previous experience in analytical equipment (ESCA, SEM, optical techniques) would be an advantage.

If your background meets the requirements, please send your application letter and curriculum vitae, including the names and addresses of two references to:

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