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## **Innovative multilayer coatings and their use in spectroscopic applications**

*Wednesday, 30 November 2011 11:00 (30 minutes)*

Multilayer coatings are key elements in the extreme ultraviolet spectral range due to the fact that they provide significant reflectance in normal incidence optical configurations. Since their working principle is based on an interferential effect, they perform only in a limited spectral range, therefore having also filtering properties. For this reason they are largely used in imaging spectroscopy, for example to observe plasma emissions in satellite instrumentation, and in laboratory applications, for example to manipulate the High Order Harmonics spectrum generated in the laser-matter interaction. Very recently they have been proposed also to manipulate the free electron lasers pulse, in the beam transport systems as well as in the experimental chambers. Innovative structures for EUV plasma observations and FEL beam manipulation have been developed. Their characteristics in term of reflectance, filtering properties, stability over time and under specific environmental agents exposition have been experimentally tested.

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**Session Classification:** Spectroscopy