

COCKCROFT INSTITUTE SEMINAR

Non–evaporable getter films for UHV/XHV vacuum chambers of accelerators

Recent results obtained at ASTeC vacuum laboratory.

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Walton Rooms A & B, The Cockcroft Institute

Abstract::

The performance of a UHV/XHV vessel can be improved with a new CERN technology non-evaporable getter (NEG) coating, which is already widely used for accelerator vacuum chambers and have already demonstrated much better vacuum performance due to low outgassing and distributed pumping speed. Besides there are other useful properties of the NEG film such as a low photon induced and secondary electron emission. These properties depend on how the film created. Better understanding of the processes involved in NEG film deposition, activation and poisoning should allow optimisation and engineering of the film with properties, which are necessary for a particular application. Over recent years ASTeC vacuum science group in collaboration Manchester Metropolitan University investigated the properties of magnetron sputtered NEG films in connection with film morphology and structure and its dependence on deposition pressure, sputtering conditions and substrate surface roughness. A role of each element in the NEG film was understood. This results in new materials and technologies for film deposition.

Recent achievements on film engineering as well as their application for accelerator design will be shown. The direction of further investigation and application will be discussed.

Everyone is welcome so please make every effort to attend.

Refreshments will be provided at 14:00.