Contribution ID : **4** Type : **Talk**

Review of optical emission spectroscopy applications of the plasma and the PFC materials interaction study in Plasma-Focus and Rod Plasma Injector devices

This overview presents a study of the plasma interaction with the plasma-facing components (PFC) materials in the Plasma-Focus (PF) and the Rod Plasma Injector (RPI) devices using optical emission spectroscopy (OES). The mentioned devices generate intense plasma streams, but they differ in operational parameters. The measurements were performed using PF-360 (NCBJ), PF-1000U (IFPiLM) and RPI-IBIS (NCBJ) facilities.
The OES study was separated into two parts. First, the time-resolved and time-integrated spectra of freely propagating plasma were recorded. Using those results it was possible to deduce the purity of plasma, plasma dynamics and, in some cases, plasma electron density. Next, on the basis of the spectroscopic investigation of plasma interaction with PFC materials, the impact of plasma on the chosen sample was determined. The explored samples were made of carbon fibre composite (CFC), tungsten and steel.

Primary author(s) : ZAŁOGA, Dobromił (National Centre for Nuclear Research)

Co-author(s) : KWIATKOWSKI, R. (National Centre for Nuclear Research); NOWAKOWSKA-LANGIER, K. (National Centre for Nuclear Research); PADUCH, M (National Centre for Nuclear Research)

Presenter(s) : ZAŁOGA, Dobromił (National Centre for Nuclear Research)

Session Classification : Session 2: Plasma Diagnostics II