

*Poster*

## **ON THE LEAD SPECTRUM IN THE LASER GENERATED PLASMA**

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Lead atoms are ablated from lead (Pb) plates by the Nd:Yag laser operated at the main mode of  $\lambda = 1064$  nm. The lead spectra were investigated in helium and oxygen plasmas at various gas pressures. The spectra were recorded by the ICCD camera mounted on the high resolution spectrograph in decaying plasma, typically with delay of  $1 \mu\text{s}$  to  $5 \mu\text{s}$  after the laser pulse. Dependencies of the Pb I lines intensities on the laser power and delay time were established.

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## **STUDYING OF EXCESSIVELY BROADENED $H\alpha$ PROFILE IN A DIELECTRIC BARRIER DISCHARGE**

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The phenomenon of Excessively Doppler broadened hydrogen lines has been detected in various types of laboratory plasma for over two decades. In this paper excessive broadening of  $H\alpha$  is investigated in a dielectric barrier discharge (DBD) in order to expand the analysis of this phenomenon to the conditions that are specific for this type of low temperature plasma. Investigations were performed at a range of pressures using hydrogen, helium and argon as a working gas. Line profiles were recorded in two orthogonal directions. It is shown that the line shape and width is highly dependent on discharge conditions and direction of observation, similarly to the behavior in a glow discharge. Time evolution of  $H\alpha$  excitation relative to the breakdown instant and discharge development was also examined.