

Abstract Submitted  
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**Peculiarities in optical excitation functions of Zn and Cd atoms.<sup>1</sup>**

H. BOGACHOV, E. REMETA, V. BOROVNIK, Institute of Electron Physics, Uzhgorod, Ukraine, O. ZATSARINNY, Drake University — We report on the results of a thorough study of the excitation functions for the spectral lines of the Zn I (n=5-7) and Cd I (n=6,7) principal series. Experimental setup similar to that in [1] was used in the present study with electron beam energy spread of  $\sim 0.7$  eV. The measured excitation functions have a number of features (mostly maxima) in the autoionizing region which are similar for Zn and Cd but less clear in the Cd case. The first features (shoulders), located near the ionization threshold just below lowest  $nd^{10}np^2$  autoionizing terms (n=4 for Zn, n=5 for Cd), could be the evidence of an effective  $Zn^-$  ( $Cd^-$ )  $np^3$  state formation. The most prominent features were observed at  $\sim 12$  eV and  $\sim 16$  eV in Zn and at  $\sim 13$  eV in Cd. They are located at the energies just above the parent terms  $3d^94s^24p$  and  $3d^94s^25p$  in Zn and  $4d^95s^25p$  in Cd, with the specific energy shifts which can be attributed to the post-collision interaction population mechanism. [1] G. G. Bogachev and E. Yu. Remeta, Optics and Spectroscopy **86**, 647 (1999).

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