



26th INTERNATIONAL CONFERENCE
ON ATOMIC COLLISIONS IN SOLIDS
(ICACS-26)

13-18 July 2014
Debrecen, Hungary

PROGRAMME
AND
BOOK OF ABSTRACTS



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Electron transmission through a metallic capillary

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We present the preliminary experimental results about electron transmission through a single metallic capillary, following our previous investigation of electron guiding through insulating nanocapillaries [1]. The incident electron energy was 150 eV and the aspect ratio of the capillary was 21.67 (length $L=19.51$ mm and inner diameter $d=0.15$ mm). The kinetic energy distribution of transmitted electrons was recorded at a tilt angle (the angle between the incident electron beam and the capillary axis) of 2° . The results are obtained by an electron spectrometer, consisted of an electron gun, a double cylindrical mirror energy analyzer (DCMA) and a channeltron detector. Fig. 1 presents the kinetic energy distribution of electrons escaping the capillary. Except the dominant peak, corresponding to the direct beam and the elastic surface scattering, there is a strong fraction of electrons that suffer inelastic collisions and secondary electrons.

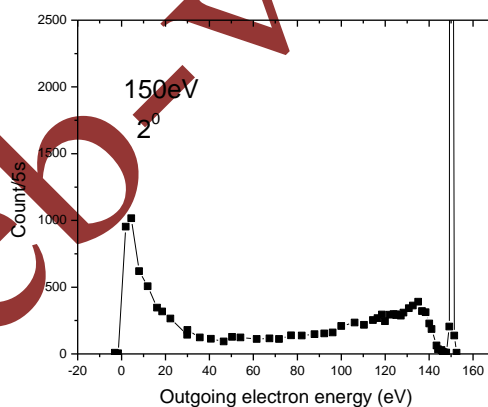


Figure 1. Energy spectrum of the electrons escaping the metallic capillary at the tilt angle 2° .

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References

- [1] A. R. Milosavljević et al., *Phys. Rev. A* (2007) 75, 030901(R).