

Q&A

Comment on "Identification of background in CMA" [*J. Surf. Anal.* **14**, 95 (2007)]

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Concerning the origin of the peak itself at P5, I think that this may arise from the elastic electrons striking the inner cylinder exactly mid-way between the input and output slits so that a small fraction of those elastically scattered there have just the correct trajectory to be detected. This will occur at around 1.6 to 1.7 times the potential V on the outer cylinder required to observe the electrons without scattering, i.e. at $eV/E_p = E/E_p = 1.6$ to 1.7. At higher and lower values of V , the electrons hit before or after this mid-point. To exit at the correct angle, their trajectory then mirrors the trajectory before impact

so that they pass the line of the inner cylinder at twice the distance of the first impact, from the first inner cylinder slit. These electrons have the correct angle but they then hit the inner cylinder and are blocked and so do not contribute to P5. Only those hitting at the mid-point are correctly positioned to cause a peak, the peak P5, by having the correct angle to get through both the detector slits and the slits in the inner cylinder. If this is the case, the Fig for P5 in Fig 4 is incorrect and requires re-drawing with the impact point half way down the inner cylinder.