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## NON DESTRUCTIVE STUDIES OF SURFACES OF METALS AND SEMICONDUCTORS

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### **Abstract:**

The growing demands to produce new materials has grown interest to develop and study the surfaces of a material without damaging its structure. In this paper a technique of non-destructive studies is discussed. The radiation from source were focused using a free standing gold zone plate. The target whose surface is to be studied is scanned through the radiation microprobe using stepper motors and an image of the surface of the target is built up in terms of detected photoelectron signals using a set of micro channel plate. Images of the surfaces studied were recorded without any energy analysis that is in terms of secondary electrons emitted from well inside the surface suffering from inelastic scattering(total electron yield mode) and with energy analysis that is in terms of primary electrons emitted from the surface without experiencing any inelastic scattering(partial electron yield mode) using a cylindrical mirror energy analyzer. Micrographs of silicon wafer with sharply defined geometrical figures, etched polycrystalline aluminum piece and a piece of zinc rod are reported.

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