

THE OPTICAL METHOD OF QUANTITATIVE
STANDARD-FREE ELEMENT ANALYSIS
OF SURFACES BY ION BEAMS

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S u m m a r y

Physical foundations of the recently developed optical method of surface diagnostics by ion beams are considered. It is shown that the method provides the opportunity of standard-free quantitative element analysis of solid matter. For 50 elements of the Periodic table, analytical spectral lines are chosen according to the elaborated criteria. The concentration sensitivities of the method for every element as well as impurity detection limits for the available apparatus are estimated. It is shown that the method is characterized by extremely high concentration sensitivity to many elements, which is less dependent on the sort of element and material. The performed calculations indicate that the method surpasses all the known analogs by its analytical properties.