

Abstract Submitted
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Webcam science – Can a useful transmission ion microscope be built for less than \$1000? ARTHUR PALLONE, PATRICK BARNES¹, Norwich University — Scientists and engineers build simple, low-cost, webcam-based instruments for use in many disciplines. Analysis of the optical signal received through the three broadband color filters – red, green and blue – form the basis of many of those instruments. The CMOS sensors in webcam pixels also produce signals in response to ionizing radiations – such as alpha particles from a radioactive source. Simple alpha radiography has been demonstrated with an alpha source and a webcam modified to expose the sensors. The performance of a direct imaging transmission ion microscope built from such a modified webcam and a commercially available polonium-210 antistatic device mounted to an optics rail is analyzed. Potential uses and limitations of the microscope are also discussed.

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