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Spherical Measuring Device of Secondary Electron Emission Coefficient Based on Pulsed Electron Beam

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In order to improve the performance of the microchannel plate, a material having a high secondary electron emission coefficient (SEEC) is required, and the SEEC of this material needs to be accurately measured. For this purpose, a SEEC measuring device with spherical collector structure was designed. The device consists of a vacuum system, a baking system, a test system, an electronic readout system, and a magnetic shield system. The measurement of the SEEC from a wide incident energy range (100eV ˜ 10keV) and a large incident angle (0°˜ 85 °) is realized by using the pulsed electron beam as the incident electron. The energy distribution of the secondary electrons is measured by a multi-layer grid structure. The SEEC of the metallic material was tested by using this device, which proves that the device is stable and good.

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