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X-ray spectroscopy of Be- to He-like germanium

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Abstract

We report on the introduction of $\text{Ge}(\text{CH}_3)_4$ into the Dresden EBIS, a further development of the Dresden EBIT. Energy-dispersive X-ray spectra from highly charged germanium ions are measured with a Si(Li)-detector at different source operation conditions, such as electron currents ranging from 50 mA to 200 mA at electron energies of up to 20 keV. Direct excitation processes in Ge^{30+} at 18 keV electron energy have been analyzed as well as radiative electron capture into Ge^{28+} up to Ge^{31+} ions. Furthermore satellite lines from dielectronic recombination processes in Ge^{28+} to Ge^{30+} ions have been measured.

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