



## X-ray spectroscopy and ion extraction at the Dresden EBIT

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### Abstract

The Dresden electron beam ion trap (EBIT) is a compact, long-term stable room-temperature EBIT able to produce bare nuclei for elements up to about  $Z = 30$  and helium-like to neon-like ions for heavier elements, respectively. With ion species ranging from  $\text{Ir}^{57+}$  up to  $\text{Ir}^{62+}$  and  $\text{Ce}^{48+}$  we demonstrate the applicability of the ion source for energy and wavelength-dispersive X-ray spectroscopy. First ion extraction experiments show that it is possible to extract ion currents of  $10^6$  ions per pulse at various pulse repetition rates, measured electrically for xenon ion pulses with a mean ion charge of  $\text{Xe}^{40+}$  and a pulse FWHM of  $15 \mu\text{s}$ . Additionally, first X-ray spectra from the interaction of extracted xenon ions with a carbon target are presented.

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