

Dresden EBIT: Results and perspectives

U. Kentsch, S. Landgraf, and G. Zschornack^{a)}

*Technische Universität Dresden, Institut für Kern- und Teilchenphysik, Mommsenstrasse 13,
D-01069 Dresden, Germany*

F. Grossmann, V. P. Ovsyannikov, and F. Ullmann

Leybold Vakuum Dresden GmbH, Zur Wetterwarte 50, D-01109 Dresden, Germany

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The Dresden electron-beam ion trap (EBIT) is a long-term stable room-temperature EBIT working without any cryogenic techniques. Spectroscopic investigations have shown that in the Dresden EBIT bare nuclei at least up to nickel can be produced as well as helium-like ions from elements such as krypton or germanium and neon-like ions from elements such as xenon or iridium. The output of quantum radiation from highly charged ions trapped in the Dresden EBIT is high enough that wavelength-dispersive spectroscopic investigations are possible. Up to now, two devices (Dresden EBIT I and Dresden EBIT II) have been built up. Results derived on Dresden EBIT II demonstrate that it is possible to produce the described apparatus in any number. Thus, it opens up a way also for small laboratories to employ highly charged ions in their investigations. © 2002 American Institute of Physics. [DOI: 10.1063/1.1429311]