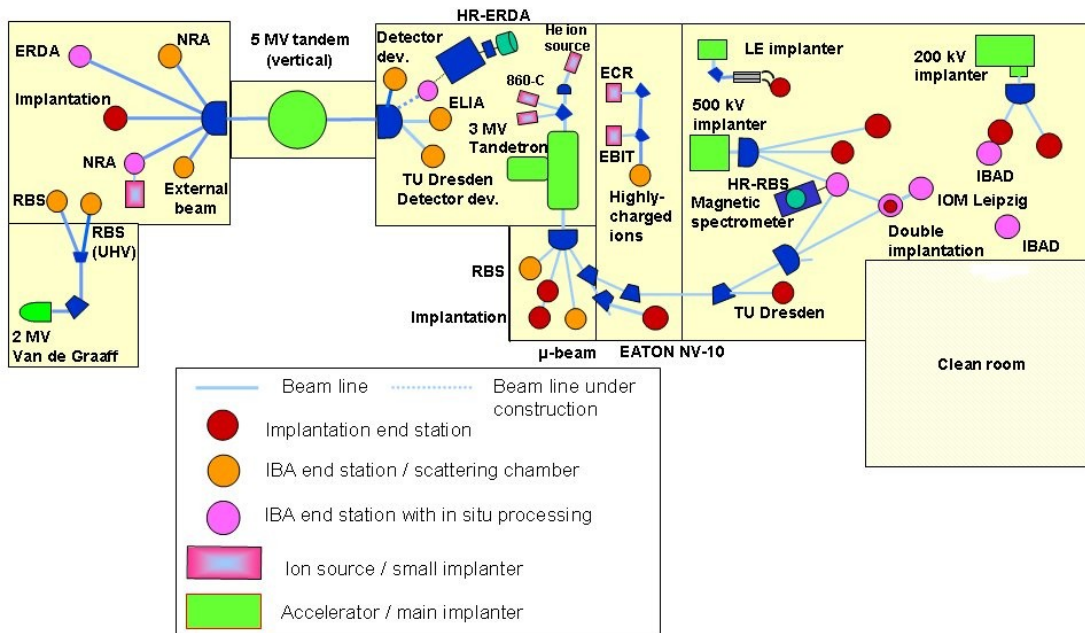


## The Rossendorf electrostatic accelerators

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The Rossendorf electrostatic accelerators (2 MV single ended van de Graaff accelerator, 5 MV tandem van de Graaff and 3 MV Tandetron) are mainly applied for high-energy implantation, surface modification and ion beam analytics. The average annual beam time has been about 1500 h (2 MV VdG), 2000 h (5 MV tandem) and 2000 h (3 MV Tandetron).



The main development activities have been directed to solve the problems of the charging belts, He implantation and to modernize the control for the accelerators. In order to improve the reliability of high-energy implantation of He ions at the 3 MV Tandetron an additional He injector with a Rb charge exchange canal has been installed (see separate report).

Three different charging belts (Cigo/Italy, Wennerlund/Sweden and Siegling/Germany) have been tested at the 5 MV tandem. The best results (life time, dust and price) have been obtained with Siegling belts. Some problems are created from the high negative self-charging of this belt.

The energy stability of both van de Graaff accelerators has been remarkable improved by a new control beam strategy on the base of a predictive compensation of terminal voltage disturbances (to be published).

The Rossendorf electrostatic accelerators together with the implanters and other ion beam devices are acknowledged by the European Union as a Center for Application of Ion Beams in Materials Research (AIM). This status allows research groups from European countries to use our equipments with financial support of the EU. The time range of this contract is 2006-2010.

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for MeV accelerators

for AIM

for charging belts and energy stabilizing