

Applications of Highly Ionized Ion Beams

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Abstract The ECR ion sources have mainly been used until now for injection of cyclotrons and a large number of these sources are presently in operation through the world. Most cyclotrons are used today for nuclear physics researches but an increasing number of these accelerators are now devoted to medical applications. The ECR ion sources have also been extensively used for producing low energy beams for academic researches in atomic and surface physics. These studies led to very encouraging results opening the way to industrial applications. In this talk some of the most promising applications of HCI beams will be reviewed. The development of these applications will require some important improvements of the ECR sources which will be discussed. A special emphasis will be given to the respective roles of ECR and EBIS ion sources in these industrial applications, and some economic and market considerations discussed.