Contribution ID: **10** Type: **Contribute Oral**

Positive Ion Sources for Supplying with Mono/multi Charged Ions the C400 Cyclotron Devoted to the CYCLHAD Hadrontherapy Center at Caen

Wednesday, September 20, 2023 9:30 AM (20 minutes)

Normandy Hadrontherapy (NHa) and Ion Beam Application (IBA) are collaborating to develop a full hadrontherapy treatment solution based on a new multiparticle cyclotron. C6+ and He2+ ions will be accelerated up to 400 MeV/u and (H2)+ up to 260 MeV/u. Three different ion sources will be carried out for each accelerated particle: the mono-charged ion sources (H2)+ and low charged ion source He2+ are provided by the Polygon Physics (PP) company. The carbon ion source is under development at NHA in collaboration with IBA and PP.
The (H2)+ ion source is an industrial Tubular Ecr Source (TES) type one fitted for the needs of the NHa C400 cyclotron (60µA of (H2)+). The He2+ ion source is a classic 10GHz ECR type one with a new concept because the complete source is set inside a vacuum chamber and it runs under 10-6 mbar of gas residual pressure. The 12C6+ ion source is also an ECR type ion source operating at 14.5GHz frequency. Its design is under progress to produce a beam of naked carbon with a high stability and reproducibility.
The article will present the External Injection System of the NHa C400 cyclotron, hence it will focus on the experimental results obtained with the (H2)+ ion source and preliminary outputs from the He2+ ECRIS. A presentation of the multicharged ECRIS design dedicated to the 12C6+ production will be done.

Funding Agency

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I have read the Code of Conduct to attend ICIS2023.

Yes

Presenter if not the submitter of this abstract

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