

FOREWORD

The 24th International Workshop on Electron Cyclotron Resonance Ion Sources (ECRIS2020), was held from September 28th–September 30th, 2020 and followed by the North-American Charge Breeding (NACB) workshop October 1st and 2nd. Both events were hosted online by the Facility for Rare Isotope Beams (FRIB) at Michigan State University.

The scientific program was similar to previous editions of the workshop and included progress reports and new development of ECR ion sources. Other topics included plasma modeling, charge breeding, plasma physics and techniques and experimental investigations of ECR plasmas.

Despite the challenges posed by the COVID-19 pandemic that prevented the community to meet in person, many people contributed and attended the workshop online across many different time zones. The program included 24 talks and 27 posters. Unlike previous years posters consisted of a shorter presentation of 8 minutes with 2 minute for questions. Overall approximately 20 students contributed to the workshop.

Highlight of the workshop included recent progress on 4th generation ECRIS working at 45 GHz at IMP and LBNL, the progress of the 3rd generation sources at FRIB and KBSI and the report of several new ion sources at INFN, IMP, IAP, HIMAC, LPSC and JYFL including for this latter a new concept of CUBE-ECRIS. Plasma investigations were presented from INFN using X-ray imaging, by MSU on experimental studies on plasma instabilities and Osaka University on microwave launching. Many contributions of metallic beam production were presented including GANIL, IMP and JINR which remain a very important topic for the community. A very interesting study of plasma chamber cooling was presented by IMP for sustainable high power operation of 28 GHz ion source using microchannels. Finally more theoretical work and modelisation were presented including a model of B-min instabilities by LBNL, a detailed modeling of electron trajectories by LPSC and simulation of electromagnetic waves in ECR cavity by INFN.

The proceedings, which include copies of presentations, are available on the JACoW website.

Finally, after the workshop it was determined that the next workshop will be held at the Institute for Plasma Research in Gandhinagar, India in 2022

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