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JYFL Ion Source Research and Development: Studies of Different Plasma Processes and Towards the Higher Beam Intensities

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Several research and development projects are in progress at the Department of Physics, University of Jyväskylä (JYFL). The work can be divided in the plasma studies and in development of ion sources, their diagnostics and different methods. The experimental plasma research covers the highly charged plasma instabilities [1], VUV emission of light ion sources [2] and photon induced electron emission [3]. The development work focuses on the diagnostics needed for the visible light emission of ECR plasma. The object of the work is to receive information from the reactions between the neutrals and highly charged ions. The ion source development covers also the work performed for RADIS [4] and beam line upgrade of the JYFL 14 GHz ECRIS. The status of the new 18 GHz ECRIS, HIISI, will be given as well. According to the schedule the first ion beam from HIISI will be extracted by summer 2016.

- [1] O. Tarvainen et al., elsewhere in these proceedings and references therein.
- [2] J. Komppula et al., elsewhere in these proceedings and references therein.
- [3] J. Laulainen et al., elsewhere in these proceedings.
- [4] T. Kalvas, et al., elsewhere in these proceedings.