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Charge breeding investigations for a future 11C treatment facility

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In this contribution, the possibilities of using a charge breeding scheme based on an Electron Beam Ion Source for beam preparation of a radioactive 11C beam for hadron therapy are discussed. Test measurements under extreme operating conditions were conducted at the REX-ISOLDE facility to explore the limitations of the charge breeder for high-intensity, low-repetition-rate, molecular CO+ beams. Based on the findings, different possible scenarios of coupling a charge breeder with either a medical synchrotron or linear accelerator are evaluated.

References: CERN-ACC-NOTE-2018-0078

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