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## Transport of intense Bi and U beams into an RFQ

*Tuesday, September 17, 2024 5:00 PM (1h 30m)*

A 48.5 MHz RFQ has been designed to transport and accelerate  $^{238}\text{U}^{40+}$  (0.52 emA) and  $^{209}\text{Bi}^{30+}$  (1.047 emA) beams extracted from a high performance ECR ion source. The RFQ design comprises of a pre-buncher built into the vanes to narrow the transmitted charge state distribution as much as possible. The design parameters as a function of cell length is optimised on  $^{209}\text{Bi}^{30+}$ . It is shown that the losses of various ions without using an inlet aperture are inevitable, but by proper coating of the vanes of the RFQ, sputtering can be minimised to a great extent. Titanium shows better results when compared with gold or copper and this has been verified using the modelling results from SRIM. The design details of matching the ECR and the RFQ and the predicted performance will be presented.

### Footnotes

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### Funding Agency

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### I have read and accept the Privacy Policy Statement

Yes

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