

University of Groningen

Non-Interceptive Beam Current and Position Monitors for a Cyclotron Based Proton Therapy Facility

Srinivasan, Sudharsan

DOI:

[10.33612/diss.149817352](https://doi.org/10.33612/diss.149817352)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Srinivasan, S. (2021). *Non-Interceptive Beam Current and Position Monitors for a Cyclotron Based Proton Therapy Facility*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.
<https://doi.org/10.33612/diss.149817352>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Acknowledgments

Over the last four years, I have come across many people in both my personal and professional life, to whom; I would like to send my heartfelt thanks and gratitude for supporting me unconditionally. Thanks to all these people, I believe in having successfully accomplished the objectives of this doctoral thesis.

First, I would like to express my sincere gratitude to my daily supervisor, Dr. P. A. Duperrex, for the continuous support of my Ph.D. study and related research activities. Thanks to his patience, motivation and belief in me, I could not have imagined having a better mentor and advisor for my Ph.D. study. Thanks to his wisdom imparted during numerous social occasions, I have learned the importance of keeping things simple, which I believe has strongly supported throughout the research.

Besides my daily supervisor, I would like to thank my other supervisors, Prof. J. M. Schippers and Prof. S. Brandenburg, for their insightful encouragement and comments, due to which I have had the opportunity to widen my research experience from various perspectives. I would like to send my sincere thanks to Prof J. M. Schippers, without whose support in beam control and operation, the experiments would not have been possible.

My special thanks go to the workshop team, Charlie Zumbach and Kotrle Goran, for their constant support in the construction of the monitors. Also, I would like to send my special thanks to the maintenance team lead by Markus Kostezer, and Pascal Meyer from the vacuum team for their help and guidance in the installation of the monitors.

My special gratitude goes to Prof Carsten P. Welsch and to the OMA network for providing me with an opportunity to be an integral part of the network. Moreover, thanks to the numerous schools, workshops and secondment organized within the network, I am grateful for all the learning experiences. I would like to send my special thanks to Johannes, Andrea, Anna, Navrit, Roland, and Jacintha, who have turned from colleagues to friends over the years. I still get a laugh when I reminisce about the time in our first OMA School in Pavia and on our little trip to Benalmadena (Torremolino) in Spain.

Acknowledgments

Also, my special thanks to Konrad and Jaime for numerous kebab lunch sessions and social occasions. I am happy that I have made a friend in Konrad who supports and believes in my ability and is constantly motivating to try new endeavors.

I cannot find enough words to thank Laxsha, who is my best friend and wife, for providing me with love and peace that has helped me sail through some tough waters with ease. To conclude, I cannot forget to thank my parents; Srinivasan and Umamaheswari, my brother; Suryanarayan and my friends for their unconditional support and for keeping me in a harmonious state in this intense academic part of my life.