

Derek **FUJIMOTO**

Letter of Introduction - Physicist at Ideon

in [linkedin.com/in/derek-fujimoto](https://www.linkedin.com/in/derek-fujimoto) ☎ (778) 873-0054 @ dfujim@protonmail.com 🐙 github.com/dfujim
📍 Vancouver, Canada ⓘ Canadian Citizen

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I am a graduating student at the University of British Columbia, having recently defended my doctoral thesis earlier this summer. Throughout my studies, working with implanted-ion β -detected NMR (β -NMR) at TRIUMF, I have accumulated expertise working with UHV and cryogenic systems, the polarization and implantation of radioactive ion beams, as well as in-depth experience with the technical aspects of the β -NMR spectrometer, DAQ, and data analysis.

My familiarity with the spectrometer and hardware is in large part due to the high-temperature upgrade which I proposed, implemented, and commissioned. The major design challenges of this work were accommodating the sample environment, which was under UHV, high magnetic field, and a wide range of temperatures (3 K to 400 K); and the spatial restrictions posed by the coldfinger cryostat.

I also took the initiative to design and write a number of software packages for both data analysis and beamspot imaging. These have been universally adopted by both local and visiting experimenters, and is capable of both rapid online work and sophisticated publication-quality analyses. These works have also been used in the development of the new β -NMR DAQ (launched this summer), and in the analysis of μ SR experiments at TRIUMF.

As the principal investigator in three β -NMR experiments (M1760, M1892, and M2072), the scientific program which I developed in our group was focused on surface measurements in amorphous materials, and includes a new collaboration with a nano-lithography group from Ireland.

I am also adept at experimentation and study in smaller offline contexts. During my Masters, I characterized a PMT for the Belle II experiment at KEK, Japan, with the intent of determining its efficacy for use as a detector in the end cap calorimeter. These experiments involved the heavy use of NIM logic circuits and high-speed electronics, as well as regular virtual meetings with our Japanese colleagues.

Throughout my graduate studies I worked closely with the Physics Education Research group at UBC to develop course materials and train teaching assistants for a first year undergraduate lab. I was also involved in the design and piloting of the the instructor TA program in the physics department. As a result, I would be very comfortable supervising students.

It would be a pleasure to have the opportunity join your team and I am excited for the opportunity to apply my expertise to a new experiment.

Sincerely,

Derek Fujimoto