



The André E. Lalonde AMS Laboratory
The Canadian Centre for Accelerator Mass Spectrometry

University of Ottawa
25 Templeton St
Ottawa ON K1N 6N5 Canada

Telephone: 613-562-5800 ext 7314
Web :www.ams.uottawa.ca



Dr. William E. Kieser – Director

email: Liam.Kieser@uottawa.ca

2020 December 14

To whom it may concern:

Ms. Nadrah Aldaeefi obtained her degree of Master of Science in Physics, Applied Physics Option from the University of Ottawa in December 2019. The requirements for this degree include the successful completion of 18 course units and a one semester project in an area related to physics. Nadrah successfully completed this project while working at the Lalonde Accelerator Mass Spectrometry Laboratory under my direction from May until December 2019. This work took two semesters as she was completing her course work at the same time.

The project on which Ms. Aldaeefi worked involved the use of an ion optical computer simulation code (SIMION) to assess the effectiveness of a single element electronic lens (an “*einzel*” lens) in focusing the beam of ions coming from the ion source in the spectrometer. During this task, she worked eagerly and diligently towards the goals of understanding the use of SIMION and providing the correct input to this code to simulate the lens. She presented the results of these simulations clearly in the project report.

In addition, Ms. Aldaeefi provided in that report a comprehensive description of the physical principles required for the operation of the AMS system and compared it with other mass spectrometry systems more commonly used. This report was reviewed by two additional professors and received a grade of A.

I recommend Ms. Aldaeefi as being well prepared to continue her studies in Physics. Her determination and enthusiasm will be a great asset to her progress in this field.

Yours sincerely,

William E. Kieser
Professor, Department of Physics

