

A COMPREHENSIVE OVERVIEW OF THE UNIVERSITY OF JORDAN VAN DE GRAAFF ACCELERATOR (JUVAC)

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Since 1983, the University of Jordan Van de Graaff accelerator (JUVAC) has been established as the first and unique, till now, ion beam analysis (IBA) facility in Jordan. It is equipped with a 4.75 MV single-ended Van de Graaff accelerator from High Voltage Engineering Company in vertical configuration. Being the first and only particle accelerator in Jordan at that time, it attracted many interested scientists specialized in various fields. However, nowadays there are less scientists/users in Jordan conducting research at this fantastic facility.

It is quite understood that the techniques used to run a particle accelerator as JUVAC have its roots in many core-level subjects of physics. Its basic principle of operation is simple enough to be sketched on a board in a freshmen physics course, but it is nevertheless robust enough to be imagined by undergraduate students! Being motivated by this fact, graduated and undergraduate physics students from the University of Jordan (UJ) joined the facility recently and took part in some IAEA projects running in Jordan. Among those students is the presenter of this contribution (Fig. 1).

This contribution aims to provide a comprehensive overview of the JUVAC facility; starting from its early history up to its current challenges and capabilities, describing its accelerating machine and presenting a literature survey of major scientific studies came out of JUVAC experiments over the years until now.

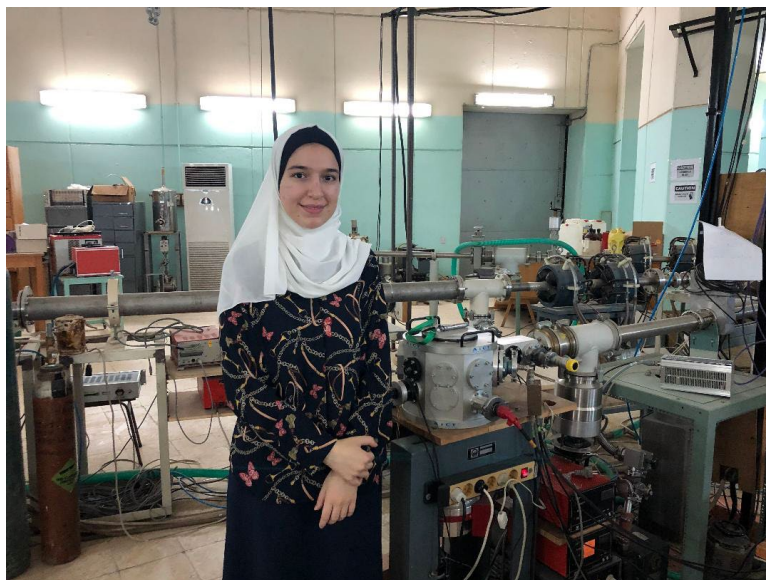


FIG. 1. Ruba Hasan (Physics undergrad, JUVAC, UJ).