



Contribution ID: 192

Type: **Parallel Talk**

Advances on applied atomic and nuclear physics at Universidad Tecnológica Metropolitana of Chile (LIATAN laboratory)

Tuesday 24 October 2017 11:30 (30 minutes)

Recently the installation of a Van de Graaff accelerator in the Campus Macul of the Universidad Tecnológica Metropolitana has promoted the formation of the Laboratorio de investigación aplicada con tecnologías atómicas y nucleares (LIATAN). One of the objectives of this scientific laboratory is the development of advanced research mainly in the field of material sciences and environmental sciences using atomic and nuclear technology. This facility is to be considered as a complex laboratory, consisting of facilities that once were operating in other institutions and that will enhance its operation through a project that our University leads. An essential component of the LIATAN Laboratory is a Van de Graaff electrostatic accelerator. This equipment includes very complex research instruments which are unique in the country since allowing different kind of studies by using IBA techniques[1] such as characterization of surface material samples or to determine trace elements in aerosols samples. On the other hand, a linear electron accelerator will also be installed at the LIATAN laboratory. This accelerator was donated by the National Cancer Institute and it was mainly used for the treatment of tumor diseases and the study of other solid, liquid, gaseous samples. Both facilities are aimed to promote further applied atomic and nuclear research in our country. This talk will describe the main characteristics of the LIATAN facilities and future research prospects.

Acknowledgments: The authors recognize financial support from Dirección de investigación y desarrollo académico (DIDA) of Universidad Tecnológica Metropolitana.

1. P.A. Miranda, M.A. Chesta, S.A. Cancino, J.R. Morales, M.I. Dinator, J.A. Wachter and C. Tenreiro. Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. Volume 248, Issue 1, 2006, Pages 150-154.

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Session Classification: Parallel Sessions - NINST

Track Classification: Nuclear Instrumentation and Facilities