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University and Enterprise Developing Experiments and Instruments for Physics

The experimental Nuclear Physics beam line of the National Accelerators Centre (CNA) was designed and constructed to support Basic Nuclear Physics (FNB) studies: the development of nuclear instrumentation, more precisely, detection systems and fast electronics, besides measuring and analysing nuclear reactions, using, among others, the capabilities of the 3MV-TANDEM accelerator at CNA. The FNB-CNA research unit has defined such specific research lines due to their direct application in different fields as nuclear medicine, radiobiology, neutron physics and particle astrophysics. Thus, the experimental FNB beam line of CNA is used for testing nuclear instrumentation, which will be used to perform experiments in radioactive ion beam (RIB) facilities; neutron beam facilities and experiments, with special application in astrophysics; and, more recently, experimental measurements for radiobiological studies.
ATI Sistemas S.L. is one of the partners of the FNB-CNA research unit in this process. Through a specific collaboration between ATI Sistemas S.L. and the University of Seville, based on the contract/project (CP1751:CGT0636) and titled "Experimental Development for Physical and Engineering Research", developed technologies can be transferred to specialized enterprises, in order to facilitate the offer of different new products to the society. ATI Sistemas S.L. is also a partner for complementary works that could not be performed at University workshops and to find solutions for any kind of experimental problems during the research projects. For this purpose, ATI Sistemas S.L. can send its technicians and engineers to learn about the CNA research and find applications for the nuclear instruments and techniques developed at CNA. This scientific collaboration aims that technical and engineering staff, from ATI Sistemas S.L. or other enterprises represented by ATI Sistemas S.L., could provide demonstration (demo) equipment, give presentations, seminars, practical activities during Master courses, related to nuclear instrumentation, participate in workshops and finally provide training opportunities to the CNA staff. Such training can be performed at other companies, which are dedicated to nuclear instrumentation developments related to particle accelerators.
ATI Sistemas can also study and offer solutions related to several processes performances at the CNA facilities; among others: electrical and mechanical installations, gas systems, air conditioning, fire protection.

Summary

Oral or poster presentation

Poster

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