



II. REPORTS ON RESEARCH

1. DEPARTMENT OF NUCLEAR REACTIONS

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Overview

During the last year our activities were spread over the three major domains: nuclear, atomic and material physics.

The nuclear physics experimental programme covered a broad range of nuclear reactions induced by light and heavy ions. New experiments were performed at the compact C-30 cyclotron at Świerk, at University of Jyväskylä, GSI Darmstadt, LN Saturne. Prospects for future experiments on nucleon structure at Forschungszentrum Jülich were open. The collaboration with INR Kiev was tightened and work was done in order to prepare experiments at the C-200 heavy ion cyclotron in Warsaw. An effort to install the ion guide isotope separator on line (IGISOL) at the C-200 cyclotron has also to be mentioned. A half a year stay of Dr. Nicholas Keeley in the Department, who received The Royal Society/Polish Academy of Science grant, resulted in many interesting results on breakup of light nuclei. Details can be found in the short abstracts presented in this report.

As far as atomic physics is concerned, the activity of a research group lead by Prof. Marian Jaskóła yielded various new results. The experiments were performed at the University of Erlangen, in close collaboration with the Pedagogical University in Kielce and the University of Basel. Fast neutrons generated in the $^3\text{H}(d,n)^4\text{He}$ reaction induced by the 2 MeV deuteron beam from the Van der Graaff accelerator at the Department were used to calibrate solid-state-nuclear-track detectors.

This was a very good year for material physics research. Jan Kaczanowski and Sławomir Kwiatkowski received Ph.D. degrees based on dissertation research performed in the material physics research programme, while Paweł Kołodziej completed his M.Sc. thesis. In collaboration with the Institute of Electronic Materials Technology in Warsaw, Research Center Karlsruhe, University of Jena and CSNSM Orsay many results were obtained. Lech Nowicki and Prof. Andrzej Turowski were awarded by the Director of the IPJ prizes for their scientific activities in 1997.

Last but not least, we had the honour to host Prof. Dietrich Fick from Philips University of Marburg, Germany. He was awarded the first Alexander von Humboldt Honorary Fellowship by Foundation for Polish Science.