

## **PREFACE**

### **Coordination Meeting on *Advanced Aspects in Nuclear Structure and Reactions at Different Energy Scales***

The present issue of the *Bulgarian Journal of Physics* contains articles based on the presentations given at the Coordination Meeting on Advanced Aspects in Nuclear Structure and Reactions at Different Energy Scales held from 25th to 28th of April 2017 in Arbanassi, Bulgaria. It took place in Sevastokrator Park Hotel, that is remarkable by its own distinct style and atmosphere. The Coordination Meeting was organized by the Nuclear Theory Laboratory (NTL) of the Institute for Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences, particularly by the Laboratory's members who form the scientific team of the Contract No. DFNI-T02/19 of the Bulgarian Science Fund "Theoretical Study of Newly Observed Nuclear Phenomena at Different Energy Scales for Understanding of Fundamental Matter Properties at Femto-Level".

The main aim of this Coordination Meeting was to connect scientists with mutually complementary expertise and to strengthen the already existing and initiate possible future collaborations in the field of nuclear structure and reactions. The participants of the Meeting discussed the following topics:

- Exotic nuclei: structure and reactions;
- Nuclear reactions mechanisms;
- Nucleon correlations in nuclei;
- Nuclear density functional theory;
- Ground-state properties and low-lying excitations;
- Electron and neutrino scattering;
- Nuclear matter properties and their impact on finite nuclei;
- Neutron stars from crust to core and equation of state;
- Nucleon form factors.

This scientific area is a part of the NTL's program for basic nuclear physics research. The broad range of subjects gave a space for the participants to cover the most actual points of view relating the theory with experiment, providing interpretation and predictions, bridging interdisciplinary topics related to nuclear structure and reactions.

The Coordination Meeting was attended by 19 participants from 5 countries: France, Greece, Italy, Spain, and Bulgaria. The scientific program contained totally thirteen oral talks and a round-table discussion. Apart from visiting several

churches-museums in Arbanassi with beautiful interior and well preserved frescos, the participants had the opportunity to go sightseeing in Veliko Tarnovo, the historical capital of the Second Bulgarian State.

The organizers and participants of the Coordination Meeting are grateful to the Bulgarian Science Fund for the support.

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