

Recent Advances in Nuclear Physics Research

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Nuclear physics focuses on the fundamental problems related to the nature of strongly interacting matter in the universe, starting from its creation. Most of our understanding of the structure of the atomic nucleus has come through the study of low energy nuclear reactions caused by the energetic charged particle accelerators. The present talk will cover recent highlights from the research work done in area of nuclear fusion-fission, nuclear level densities, reactions with weakly bound nuclei etc., utilizing accelerators and neutrino and nuclear structure studies using reactor. Application-oriented programs using accelerators, viz., radioisotopes production, radiation damage studies on space bound devices, yield improvement in wheat and rice seeds, secondary neutron production for cross-section measurements etc. will also be discussed. The future direction in the field and upcoming facilities in India to perform frontline research will be presented.