

Significant Research Contributions of Dr. Rajanikanta Choudhury

Dr. Rajanikanta Choudhury has made outstanding contributions in several frontier areas of Nuclear Physics and Interdisciplinary sciences. Dr. Choudhury's expertise ranges from low to high energy Nuclear Physics and the allied fields where nuclear techniques are applied.

He has made pioneering contributions in the study of the nuclear fission process. His early investigations on the rare modes of ternary and quaternary fission showed that fission dynamics is governed by strong viscosity effects, which makes the process slow compared to other decay modes. This was later on confirmed by the accelerator experiments in heavy ion induced fusion-fission reactions. His recent studies on heavy ion induced fission reactions have led to a systematic understanding of the effects of entrance channel mass asymmetry, target and projectile deformation and shell closure in the fission dynamics. He has developed a versatile theoretical formalism on fission fragment angular distributions which explains the long standing issue of the anomalous behaviour of the fission fragment anisotropies observed in many systems.

Dr. Choudhury was responsible for commissioning of the first state of art AMS facility in the country for high precision ^{14}C dating. This has opened up possibilities for research in many inter-disciplinary areas of geo-science, oceanography, archaeology etc., by providing accurate dates of samples upto 40-50,000 years.

Dr. Choudhury is contributing to the programme of setting up of high intensity proton accelerators for energy applications.

Dr. Choudhury has published over 180 research papers in leading international journals. Dr. Choudhury is spearheading the Nuclear Physics programme in the country as Head, Nuclear Physics Division, Bhabha Atomic Research Centre.

In view of the outstanding contributions made by Dr. Rajanikanta Choudhury, he is strongly recommended for the Biju Patnaik Award for Scientific excellence.