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Picking up and processing tiny electrical charges



Dr B. Satyanarayana *formerly* **DHEP, TIFR**

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YouTube https://youtu.be/5HcH16HP4VQ

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The main job of an instrumentation engineer in basic science experiments is to pick up tiny electrical charges produced by the detector elements and process the same in ways that align with the physics observables. Over the past four decades, our group has built and operated several detectors both for the nonaccelerator as well as collider experiments. Due to their specific design requirements, these experiments differed in measurables and of their resolutions, trigger criteria, choice of detector elements, their signal characteristics, even cost and time considerations, etc. A review of these experiments and their detector-specific aspects will be presented and often their state-of-arts will be mentioned.

Dr. B. Satyanarayana did his B. Tech in Electronics and Communication Engineering from J.N.T. University, Hyderabad and Ph.D. in Physics from IIT Bombay. He is a Visiting Professor at the Applied Science Department of the American College, Madurai and was an AICTE-INAE Distinguished Visiting Professor at the Symbiosis Institute of Technology, Pune. During his about 41 years of service at TIFR, he made crucial contributions to a series of underground experiments at KGF, D0 experiment on Tevatron, CMS experiment on LHC and to the INO project. He guided a large number of doctoral, master and undergraduate students. He served on many academic councils, boards of studies and advisory boards of colleges, universities, and many national organizations of eminence. He is an active member of many professional organizations' and has held several senior executive positions in them. He passionately engages with students through INO, TIFR and IEEE outreach platforms. He was honoured with IEEE Bombay Section's Outstanding Volunteer Award (2014), IEEE MGA's Achievement Award (2016) and TIFR's Homi Bhabha Award in Science Education (2020) besides other accolades. Dr. Satyanarayana has organized 930 ASET Colloquia, numerous of them by high profile dignitaries, over 22 years.