



Contribution ID: 158

Type: **Poster**

Development of linseed oil-free Bakelite Resistive Plate Chambers

Wednesday 3 September 2008 15:10 (20 minutes)

In this paper we would like to present a comparative study of the Resistive Plate Chambers (RPC) made of different grades of Bakelite paper laminates, produced and commercially available in India. The chambers, operated in the streamer mode using argon, tetrafluoroethane and isobutene in 34:59:7 mixing ratio, are tested for the efficiency and stability with cosmic rays. A particular grade of Bakelite (P-120, NEMA LI-1989 Grade XXX), used for high voltage insulation in humid conditions, was found to give satisfactory performance with stable efficiency of >96% continuously for a long period. In the first set of detectors made with such Bakelite, a thin coating of silicone fluid on the inner surfaces of the Bakelite was found to be necessary for operation of the detector. However, very recently RPCs made with the same grade of Bakelite but having very fine surface finish, are found to give equivalent performance even without any coating inside. Results of the surface profile studies of the Bakelite and the timing properties & cross-talk of such detectors will also be presented.

Author: Prof. SUDEB, Bhattacharya (Saha Institute of Nuclear Physics, Kolkata, India)

Presenter: Prof. SUDEB, Bhattacharya (Saha Institute of Nuclear Physics, Kolkata, India)

Session Classification: Poster Session 2 - PPE & Nuclear

Track Classification: Applications in Particle Physics