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## Use of Micro Pattern Gas Detectors In some Nuclear Physics Experiments

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Emanuel Pollacco, Denis Calvet, Anna Corsi, Frederic Château, Alain Delbart, Jean-Marc Gheller, Alain Gillibert, Alexandre Obertelli, Clementine Santamaria.  
IRFU, CEA Saclay, Gif-sur-Yvette, France  
Rui d'Oliviera, Bertrand Mehl.  
TD-DEM, CERN

Antti Saastamoinen, Brian Roeder, Alexandra Spridon,  
Grigory Rogachev, Ethan Uberseder, Yevgen Koshchii, Robert Tribble.  
Cyclotron Institute, Texas A&M University, College Station, TX, USA

Livius TRACHE  
IFIN-HH, Bucharest-Magurele, Romania

M. Sako, M. Sasano, H. Baba  
RIKEN, 2-1 Hirosawa, Wako, Japan

With cutting-edge progress in MPGD, yielding combined charge, time and position good resolution we are attempting to supersede conventional detectors (ion chambers or solid state devices) in nuclear physics. Basically the difficulties we are surmounting are (i) specific gases required for active targets (e.g. H<sub>2</sub>, D<sub>2</sub> and He), (ii) at low and high pressures, (iii) the extraction of vertices from binary final states requiring wide dynamic ranges (iv) background subtraction from beta decay and (v) reaching optimum/reliable MPGD structures to reach competitive charge resolution total charge measurements.

In the presentation we will give an outline of new MPGD based instruments being deployed in experiments for RIKEN (ZiTIX –unitary charge, time and position tracker for fission fragments at high counting rates; MINOS –an ‘active’LH<sub>2</sub> target) and Texas A&M (AstroBox-2 low energy proton decay spectra <300keV), MDM (Multi sampling focal plane detector for heavy ions above 8 MeV.A), TexAT (Active target for astro-physics)). New recent experimental results will be given. Future developments being undertaken will be given.

**Primary author:** Dr POLLACCO, Emanuel (IRFU/SPhN)

**Presenter:** Dr POLLACCO, Emanuel (IRFU/SPhN)

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