

TECHNICAL R&D AT IPN ORSAY OF INTEREST FOR FAIR

Journées FAIR-France, May 17-18, 2017

IPN Orsay

**Unité mixte de recherche 8608
CNRS-IN2P3-Univ. Paris-Sud
Université Paris-Saclay**

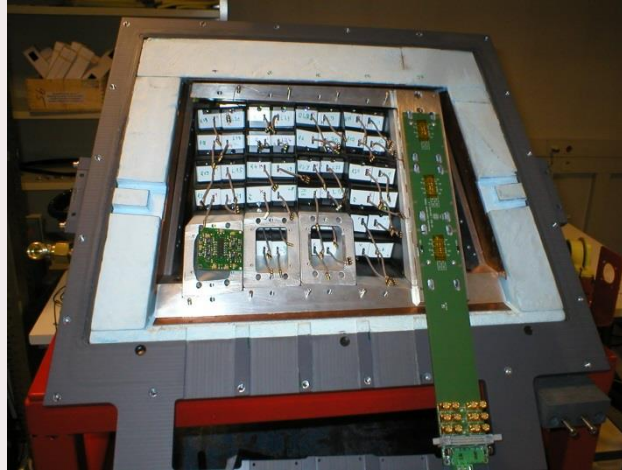
91406 Orsay cedex
Tél. : +33 1 69 15 73 40
Fax : +33 1 69 15 64 70
<http://ipnwww.in2p3.fr>

May 17, 2017
B. Genolini (genolini@ipno.in2p3.fr)

CALORIMETRY WITH PBWO₄

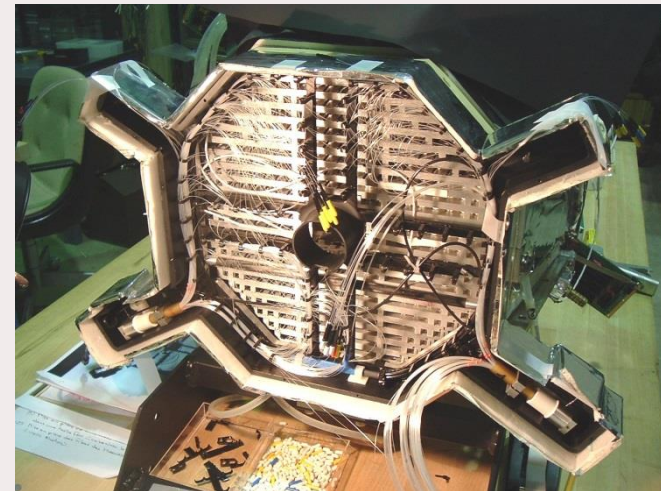
R&D for PANDA

- Implementation and test of a 60-crystal prototype
- Calibration bench



DVCS @ JLAB

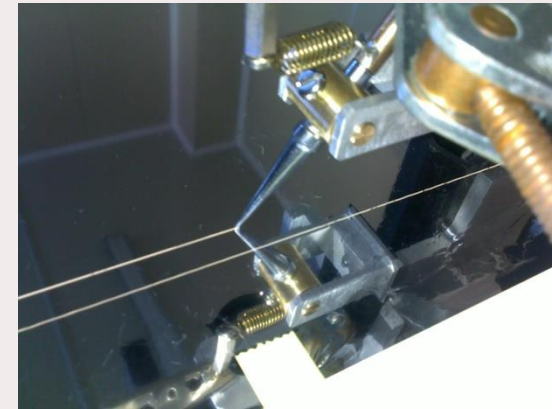
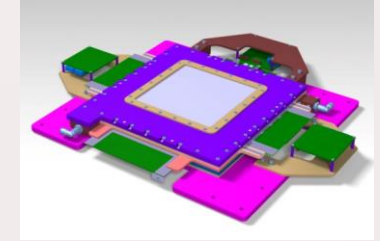
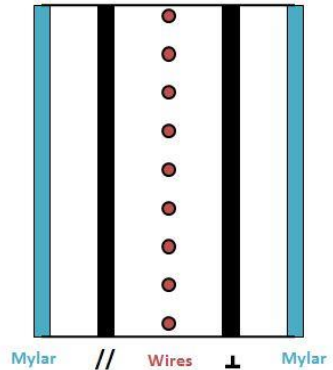
- Crystal integration + thermal management
- Preamplifiers



Future: involvement in R&D on calorimetry for JLAB with EIC in mind ("Gluonometry" project)
(PbWO₄ production + SiPM readout)

LOW-MATTER GAS DETECTORS

SOFIA wire chamber



R&D on carbon wire → increased
transparency and uniformity



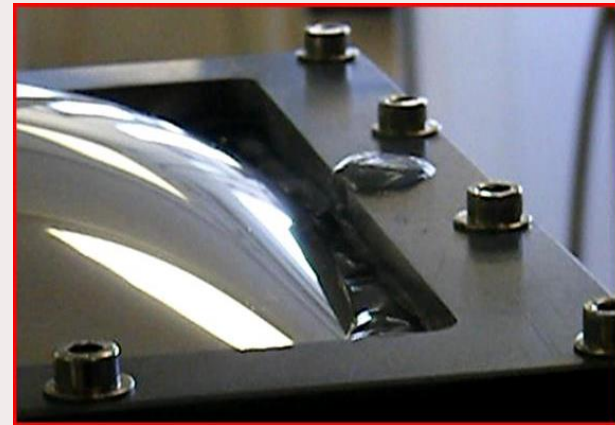
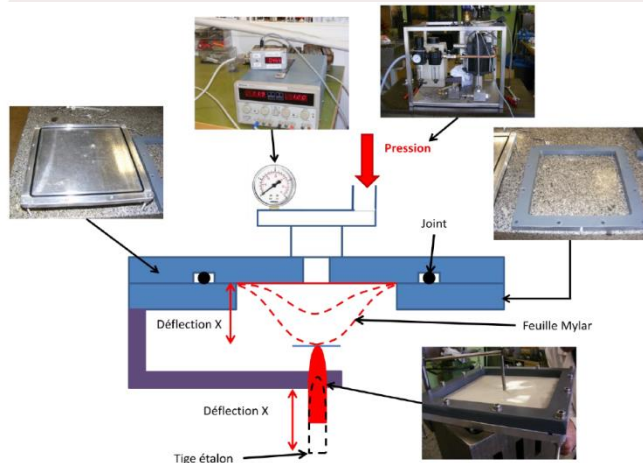
G. Charles et al., Carbon wire chamber at sub-atmospheric pressure, NIMA 2017

MECHANICAL INTEGRATION WITH LOW MATTER

Anti-Compton structure with dedicated composite structure @ assembly workshop



Mechanical resistance R&D for gas detector windows



TEST FACILITIES

Existing test benches + know-how (photodetection, semiconductor, gas detectors)



Prospects

- ALTO being equipped with [signal digitizers](#) → online and distributed signal processing
- Funding for a test-bench with 2-D motorized plate system, 30-channel fast digitizer (PRAE, [EPJ web conf. 2017](#)), to be commissioned at ALTO

SUMMARY

PbWO₄ calorimeters

Know-how on PbWO₄ calorimeters
from previous projects

R&D for the EIC calorimeter

Heavy ion / low energy ID

Low-pressure gas detectors
Carbon wire chambers (SOFIA)

Silicon detectors + ion ID with
signal processing
(FAZIA, GASPARD)

Know-how in test, calibration

R&D / calibration platform based on signal processing

Integration techniques

R&D on composite structures

R&D for assembly techniques