

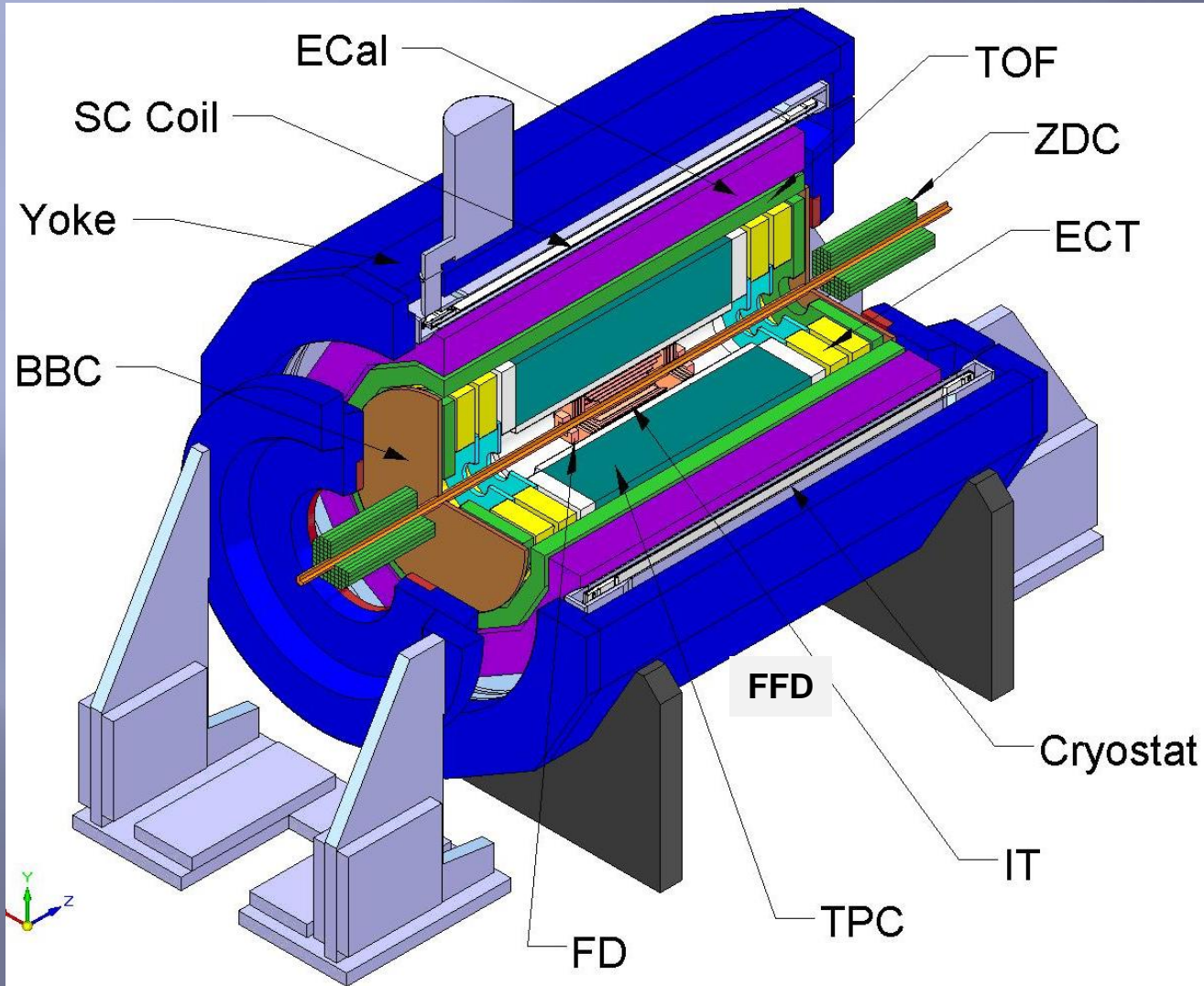


Daniel Dąbrowski

Gas system for MPD Time-of-Flight detector



MultiPurpose Detector (MPD)



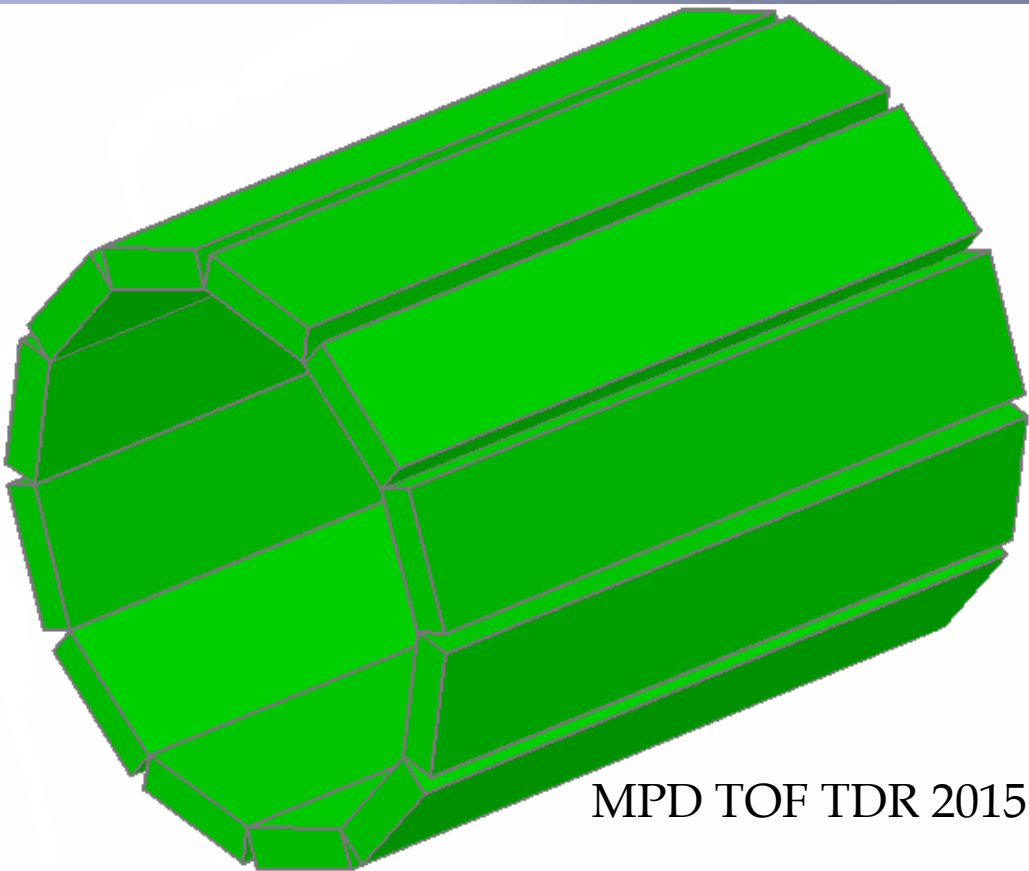
Tracking: *TPC, IT, ECT*

T0, Triggering: *FFD*

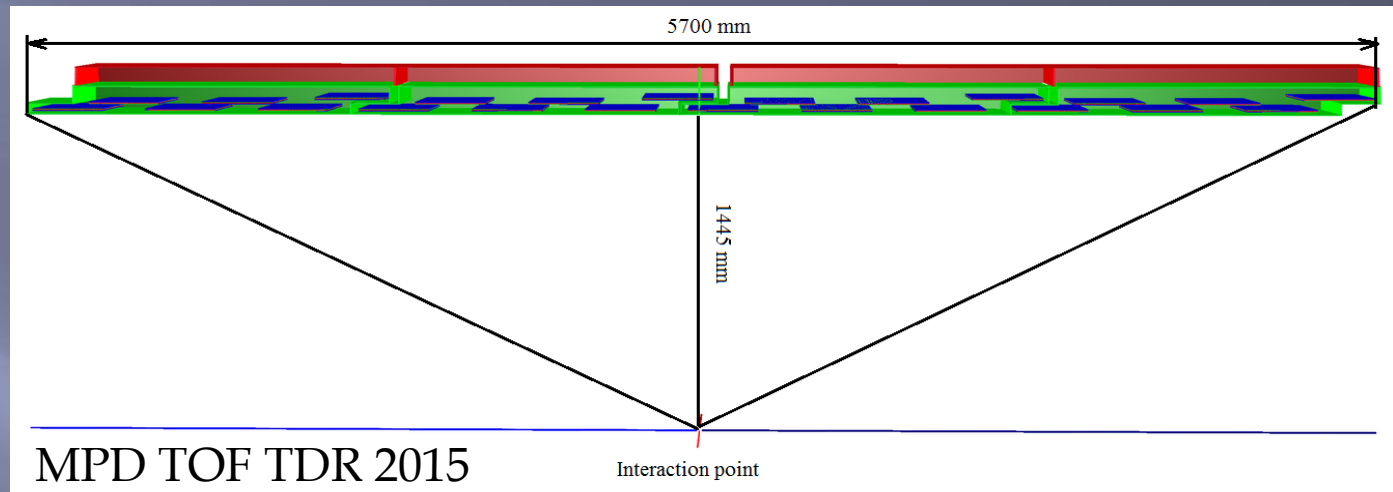
Centrality, Event plane: *ZDC*

Particle ID: *TOF, ECAL, TPC*

Time-Of-Flight (TOF) detector

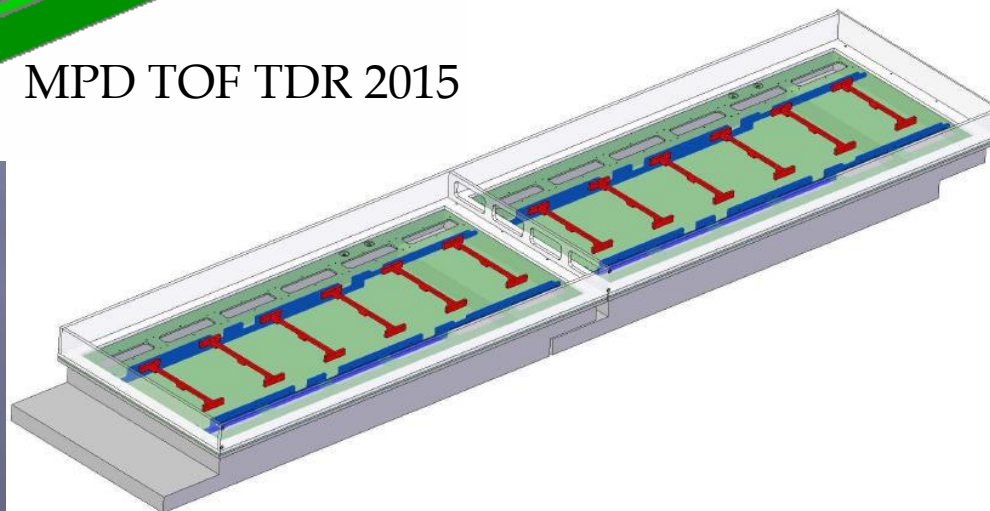


MPD TOF TDR 2015



MPD TOF TDR 2015

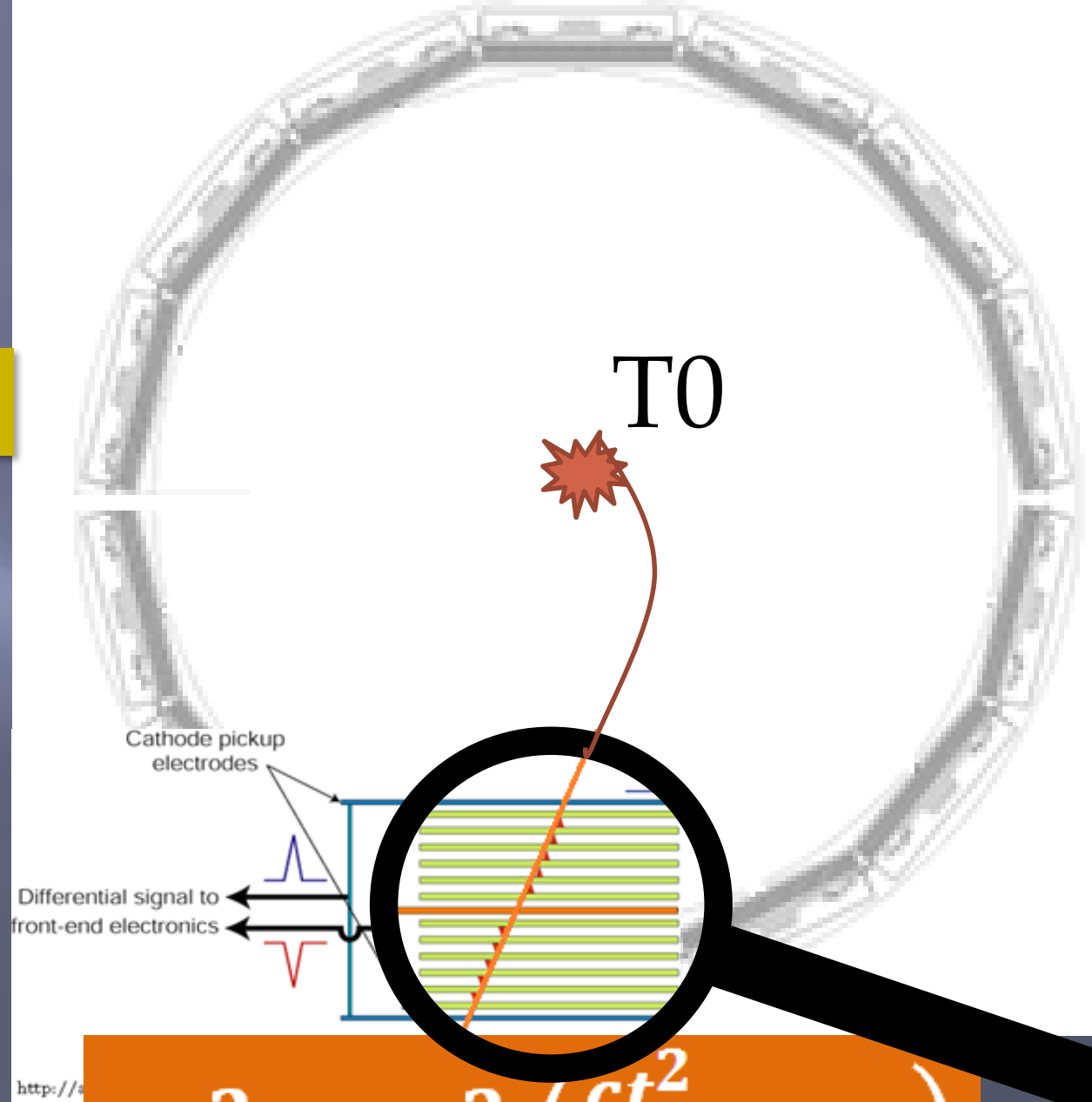
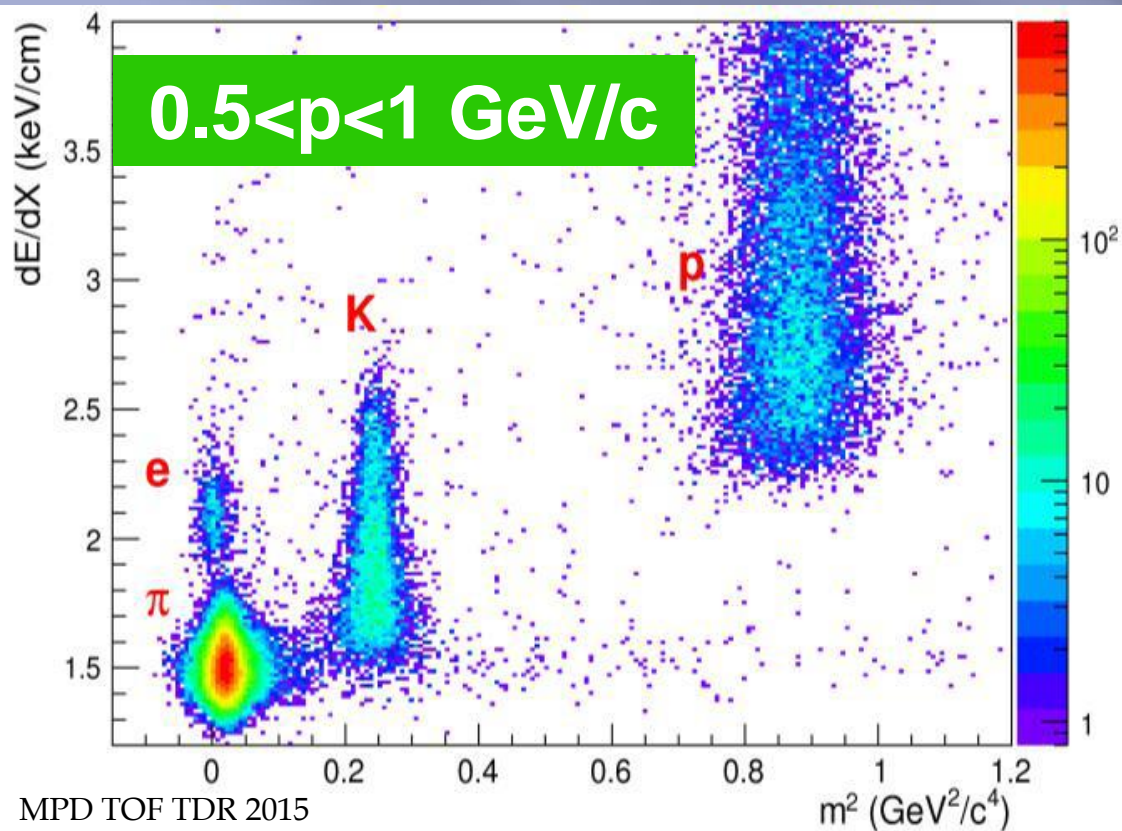
Interaction point



MPD TOF TDR 2015

How does it work ?

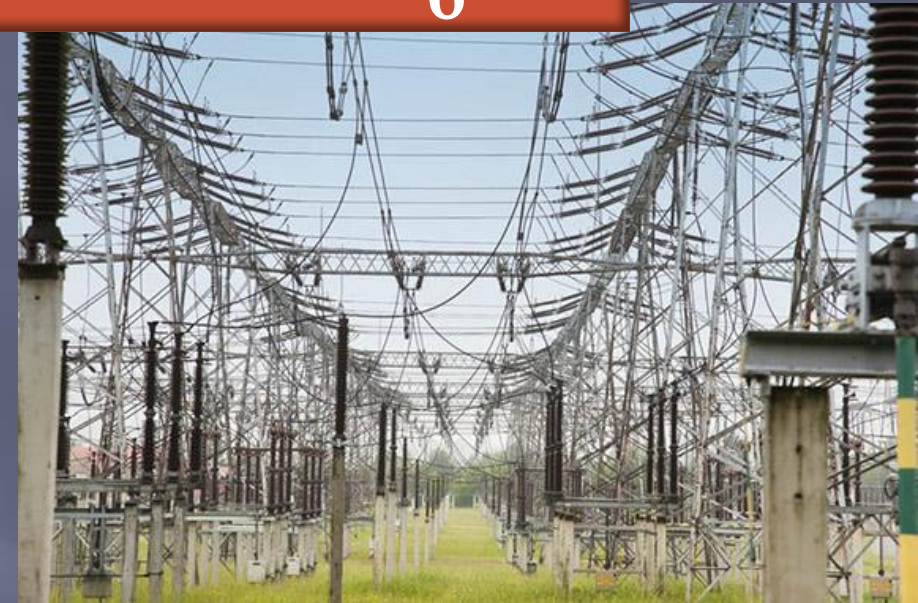
Particle IDentification (PID):



$$m^2 = p^2 \left(\frac{ct^2}{l^2} - 1 \right)$$

Gas Mixture

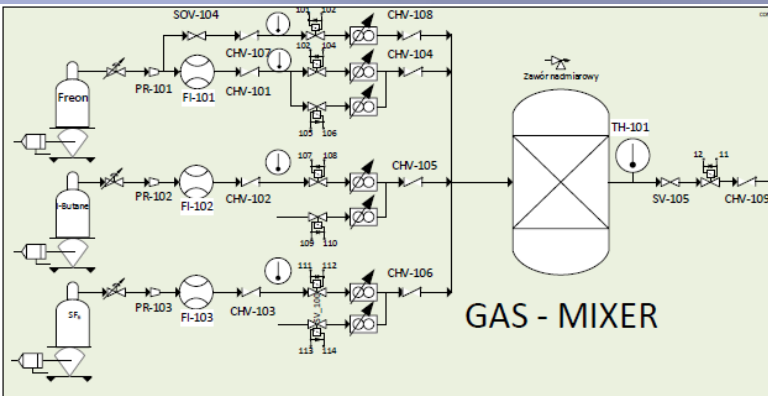
90% $C_2H_2F_4$ + 5% $i-C_4H_{10}$ + 5% SF_6



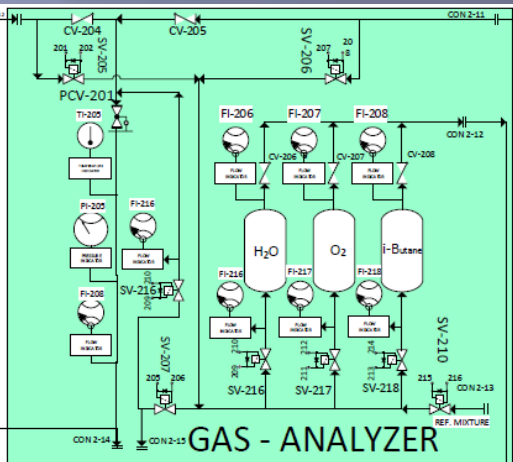
- Low threshold of avalanches

- No secondary effects, like photon feedback

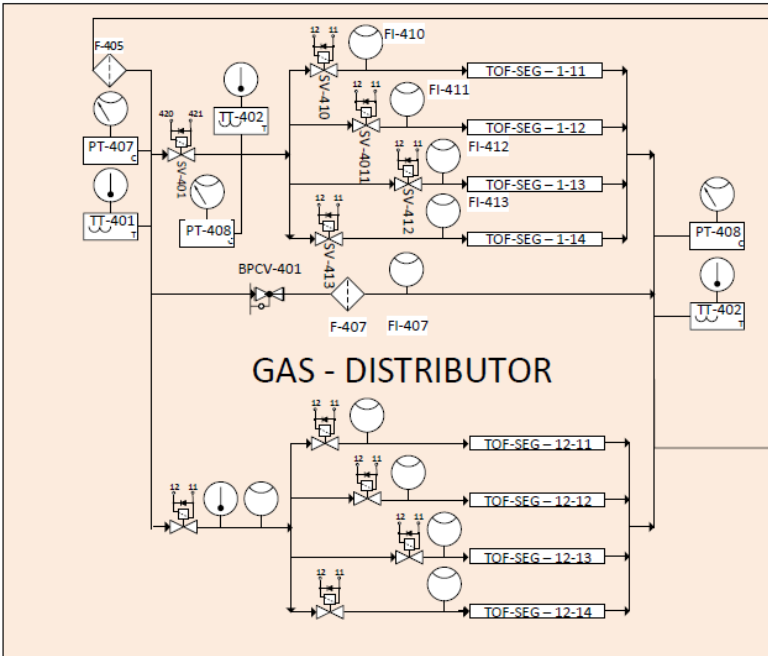
- Fast (high electrons drift velocity)



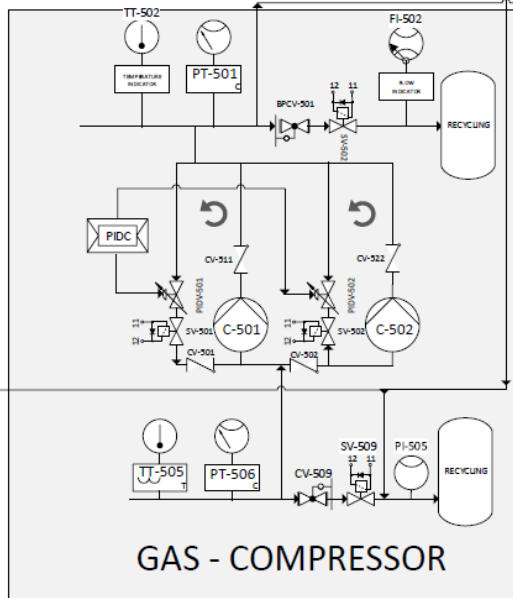
GAS - MIXER



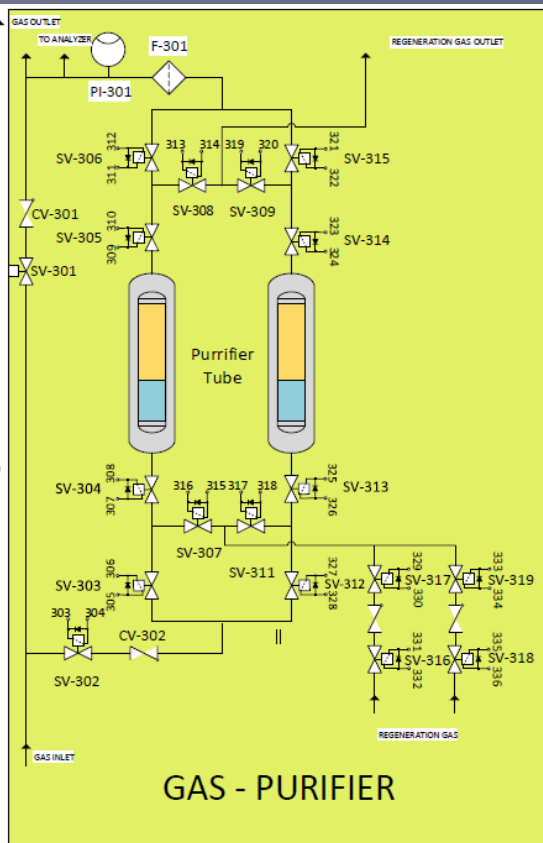
GAS - ANALYZER



GAS - DISTRIBUTOR



GAS - COMPRESSOR



GAS - PURIFIER

TOF/MPD Collaboration JINR
Dubna, December 2015, Rev.

MPD NICA

Technical Design Report

of the

Time of Flight System (TOF)

TOF Group of the MPD Collaboration

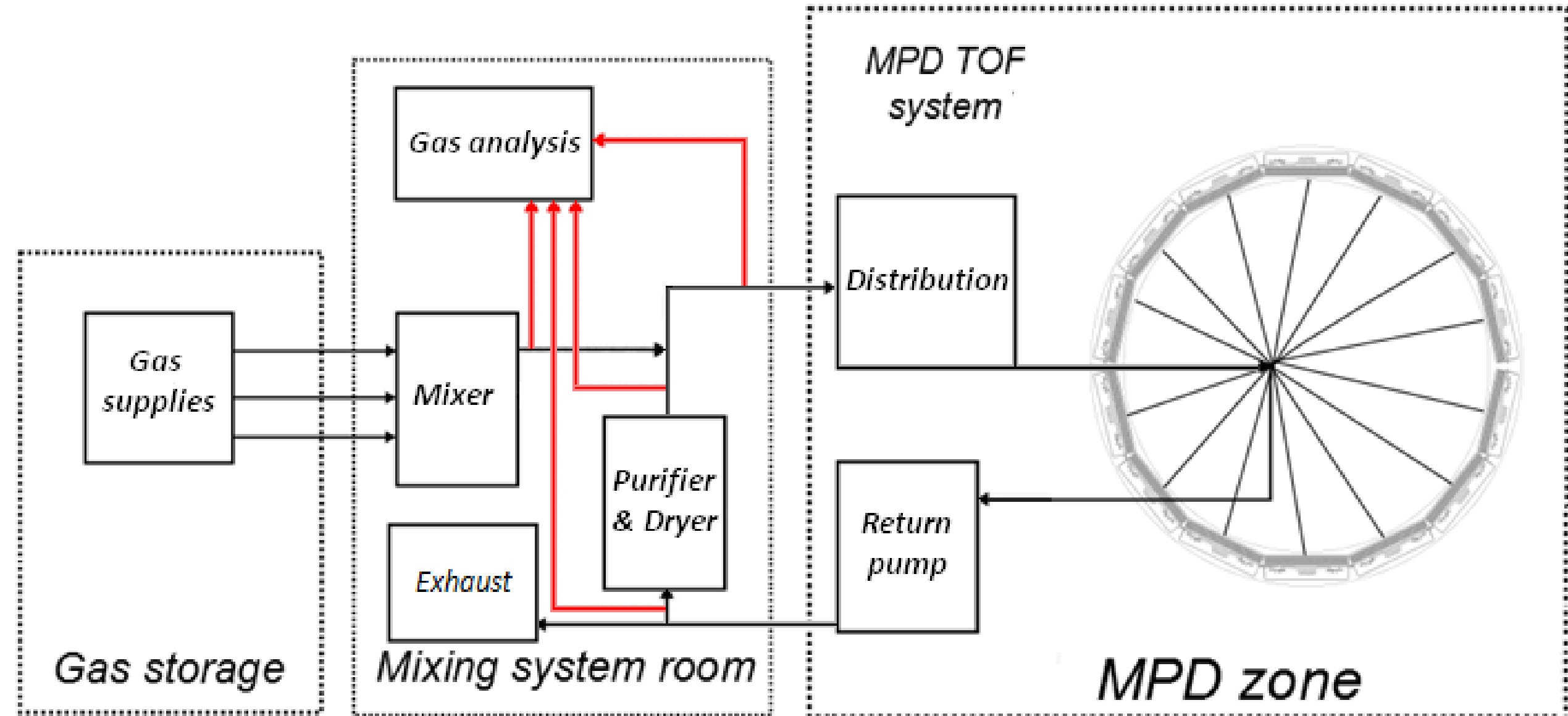
Laboratory of High Energy Physics, JINR, Dubna:
V.A. Babkin, S.N. Bazylev, M.G. Buryakov, V.M. Golovatyuk, P.
Yu.I. Fedotov, V.I. Kolesnikov, S.P. Lobastov, V.A. Petrov, M.M. Ru
I.V. Slepnev, A.V. Shutov, A.V. Shipunov, S.V. Volgin, N.M. Vladimir

Warsaw University of Technology, Warsaw, Poland:
D. Dąbrowski, M. J. Peryt, K. Roslon.

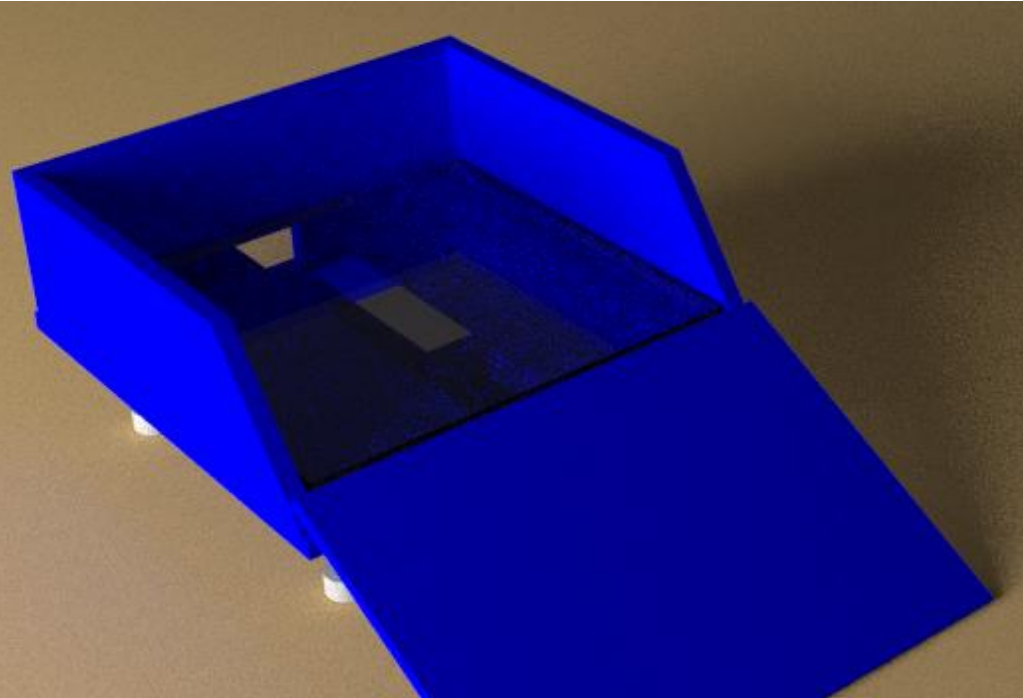
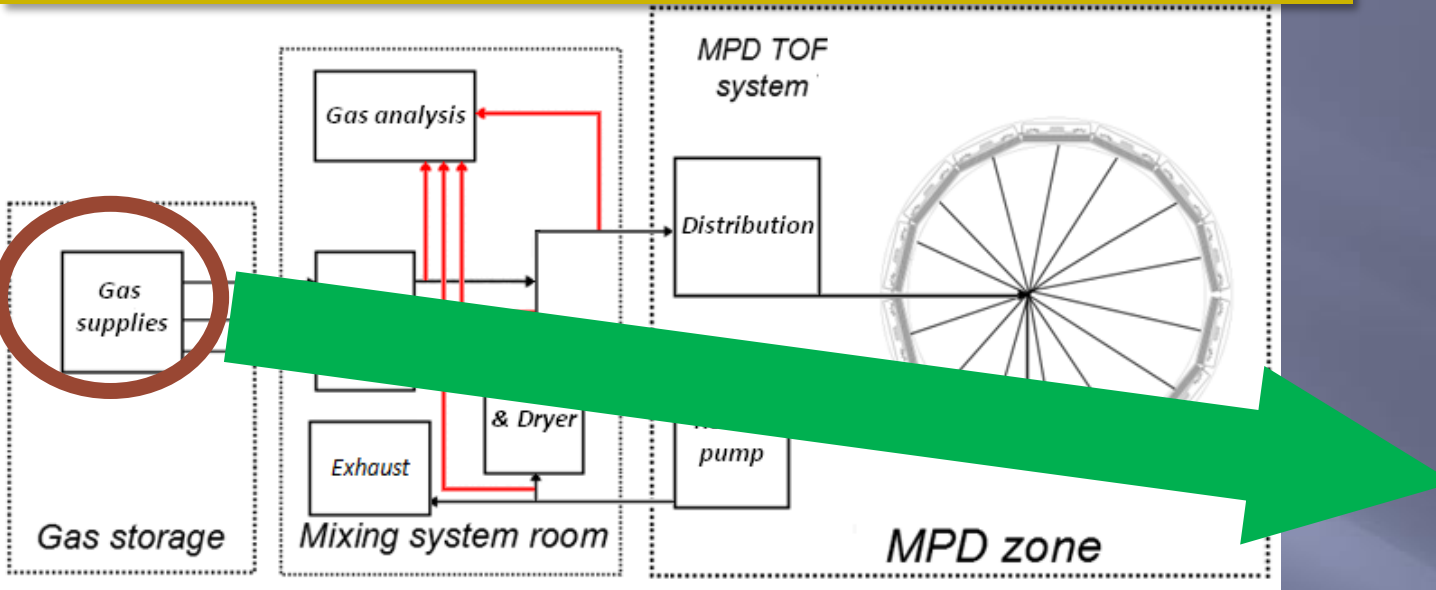
B. I. Stepanov Institute of Physics, NASB, Minsk, Belarus:

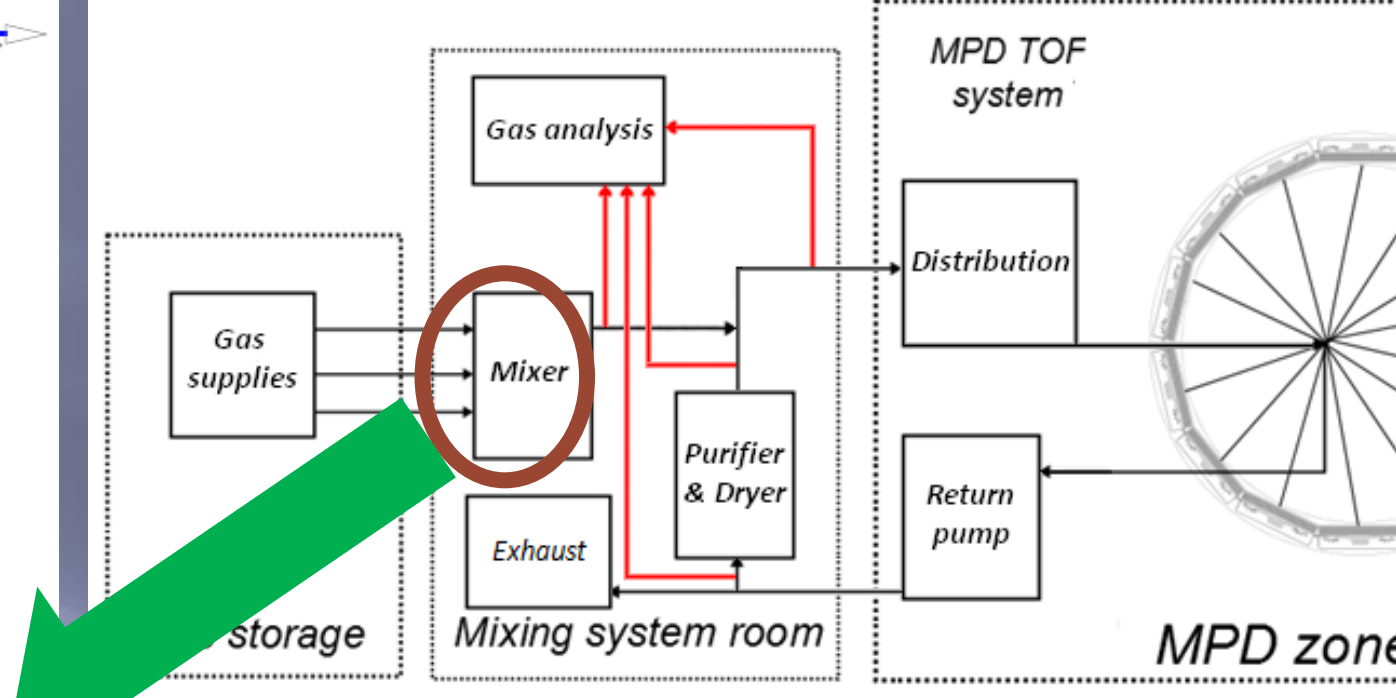
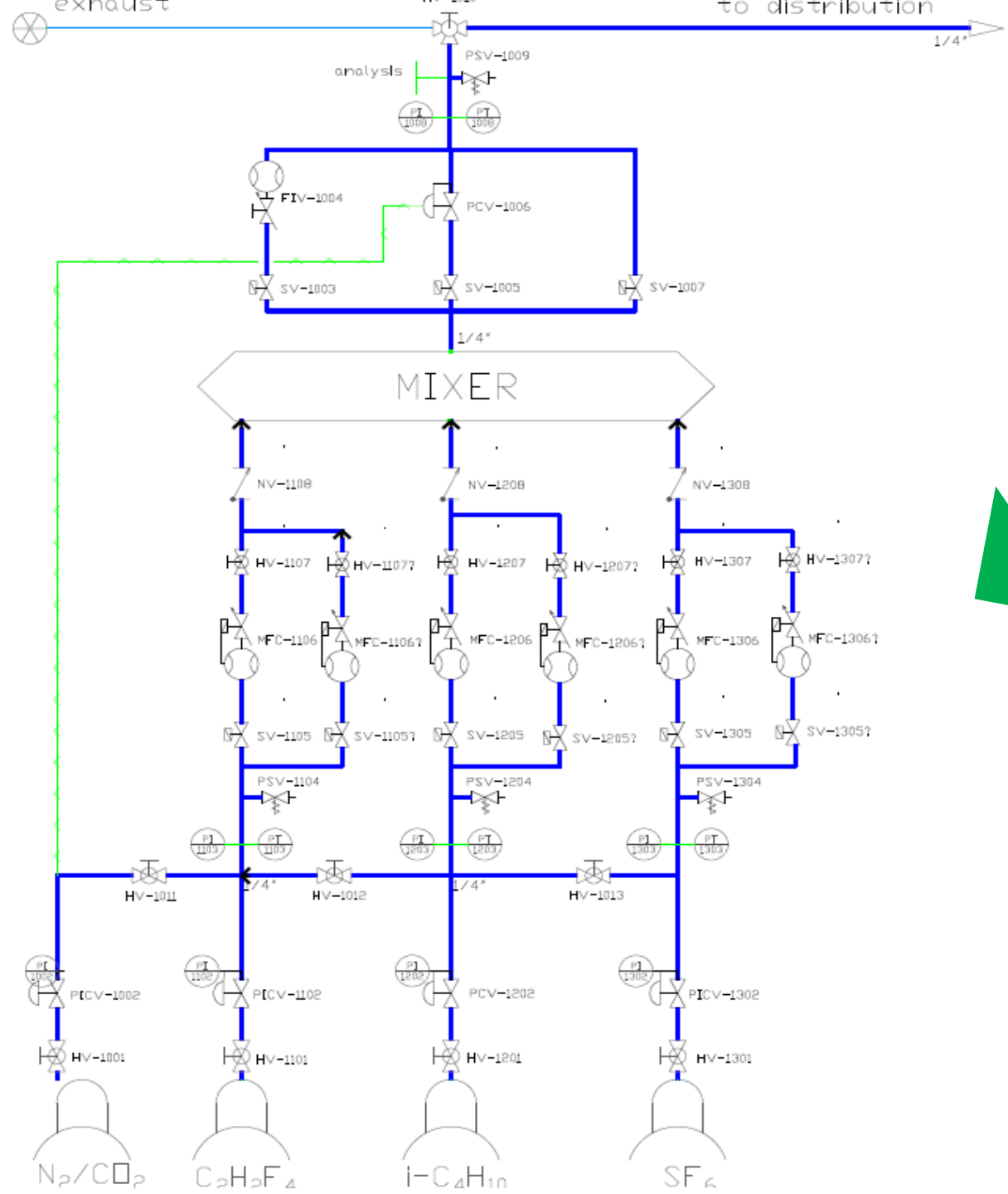
	NICA-MPD-TOF			
	GAS SYSTEM UNIT			
D. DĄBROWSKI, M. J. PERYT	ROZMIAR	NR FSQM	NR RYSUNKU	WER.
V8BIHEP	SZALA	1:1	6.01	1.0
	ARWUZ	121		

Gas system



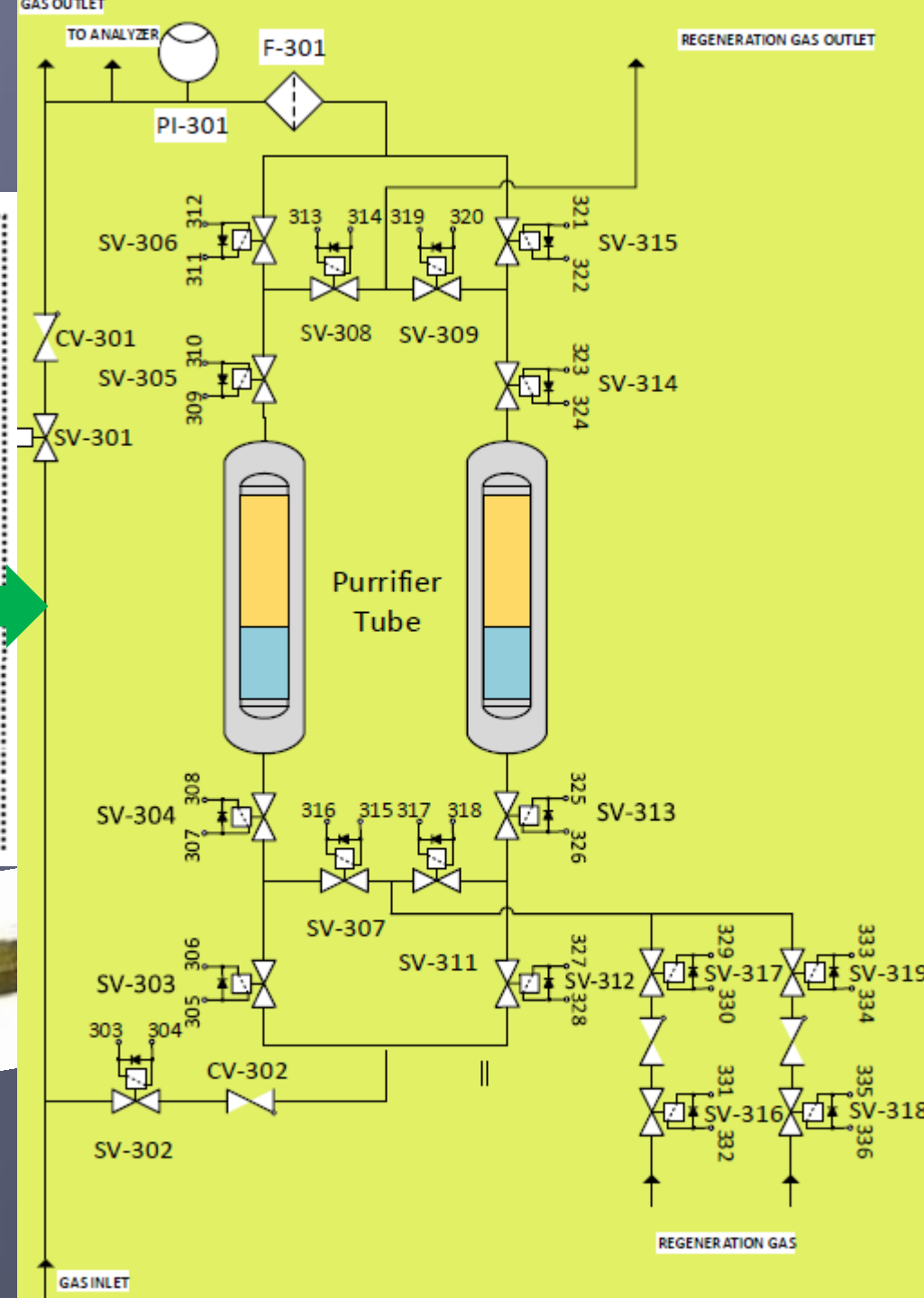
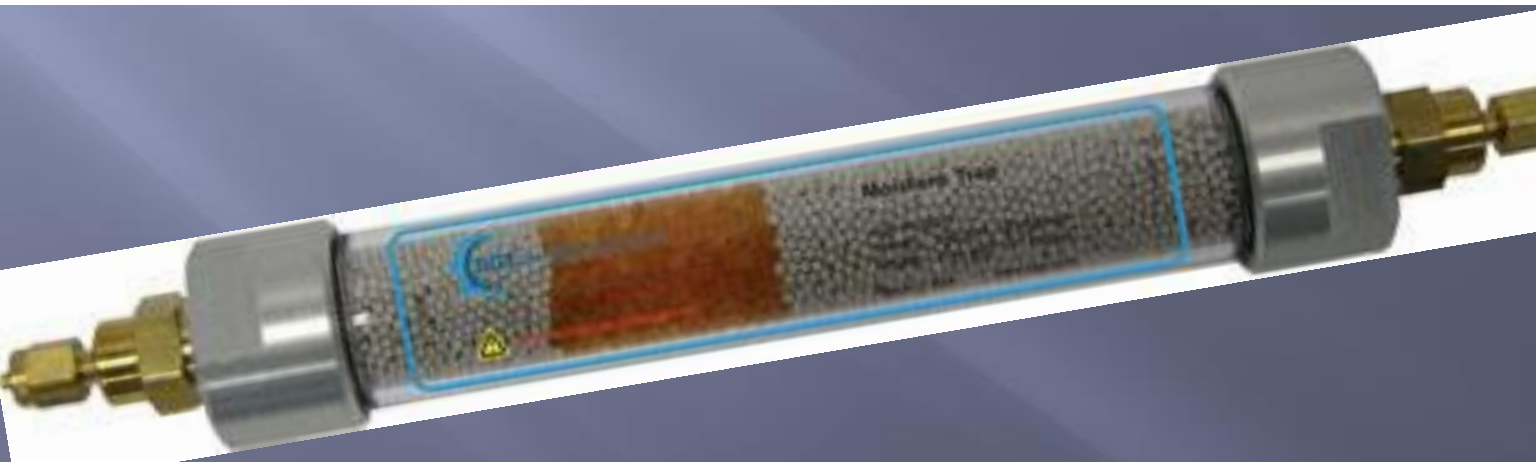
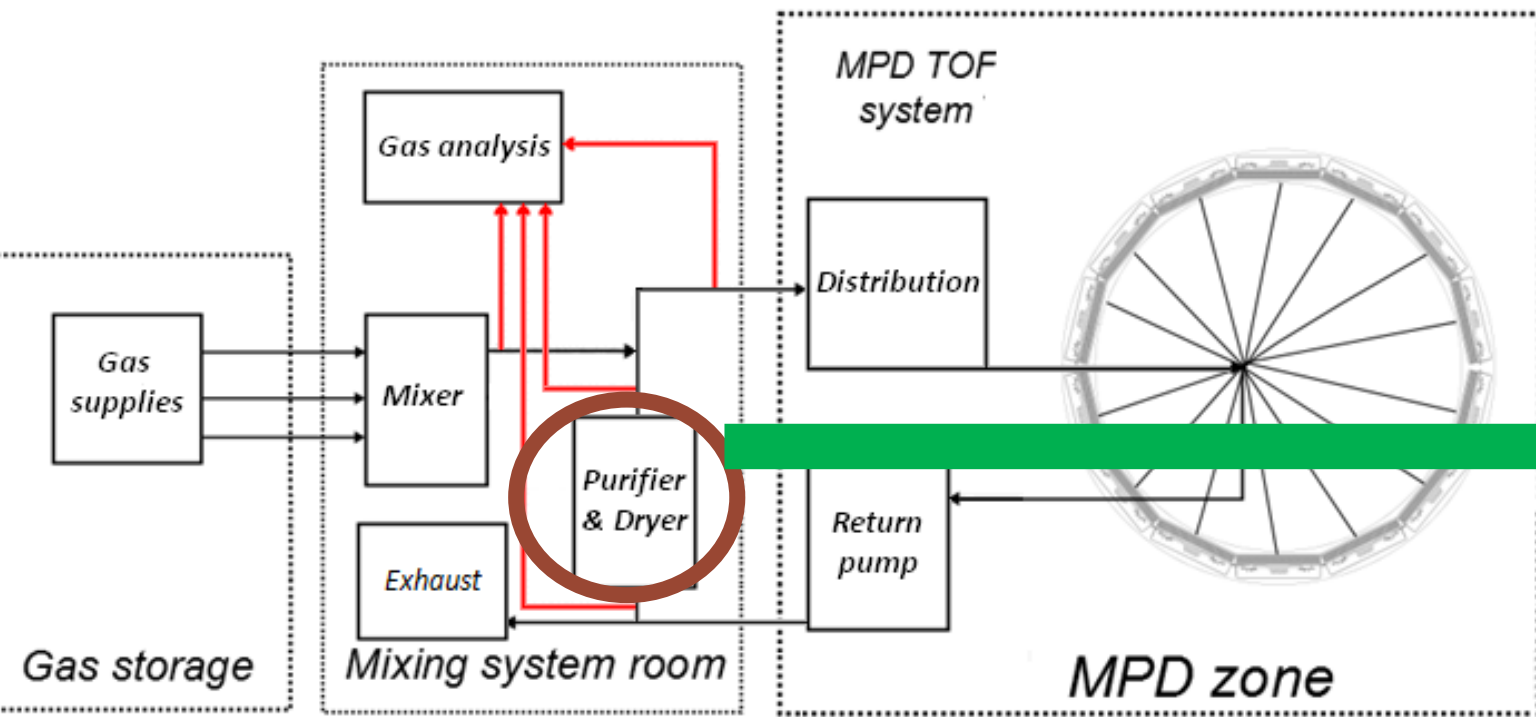
Gas supply system



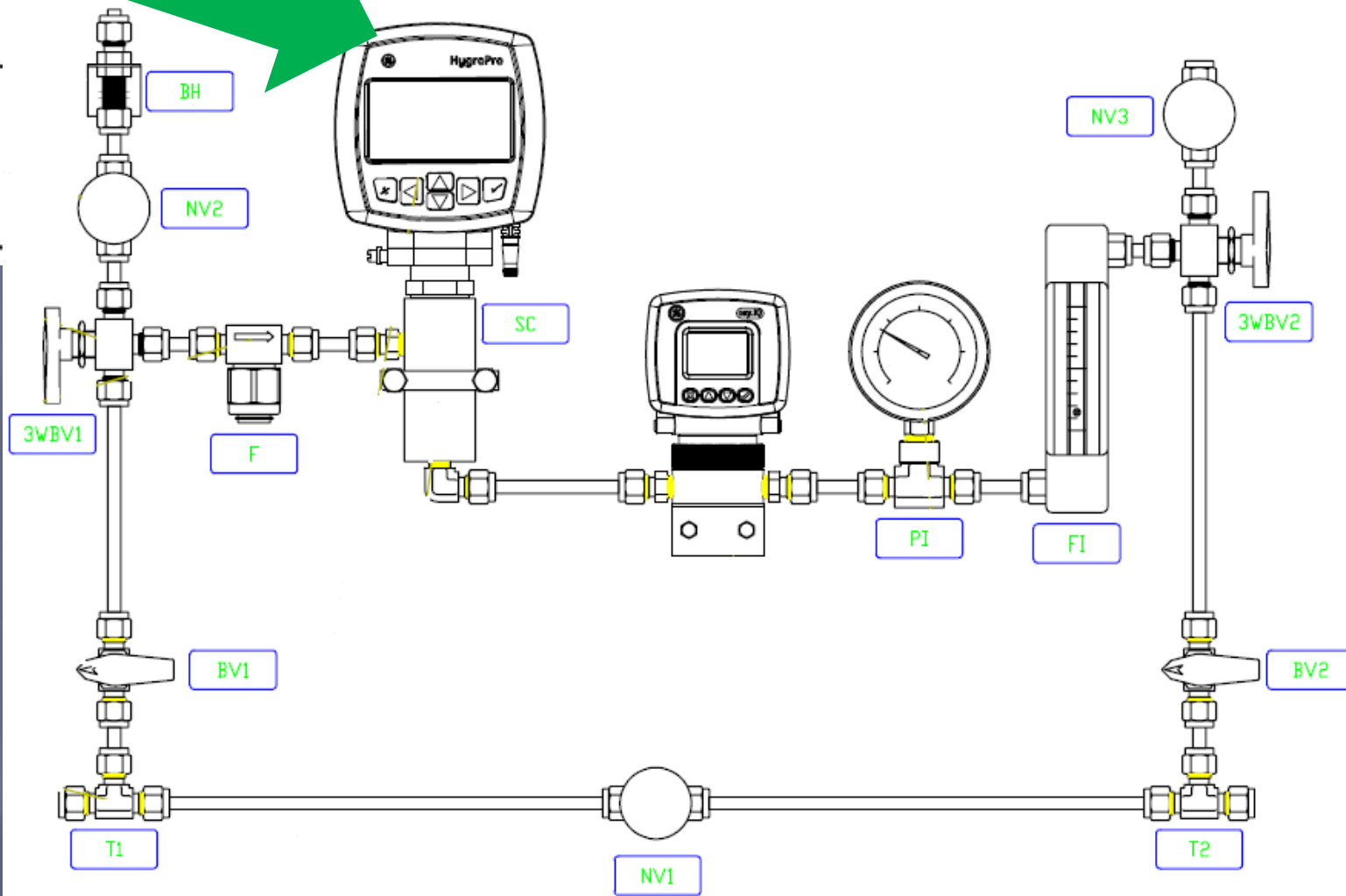
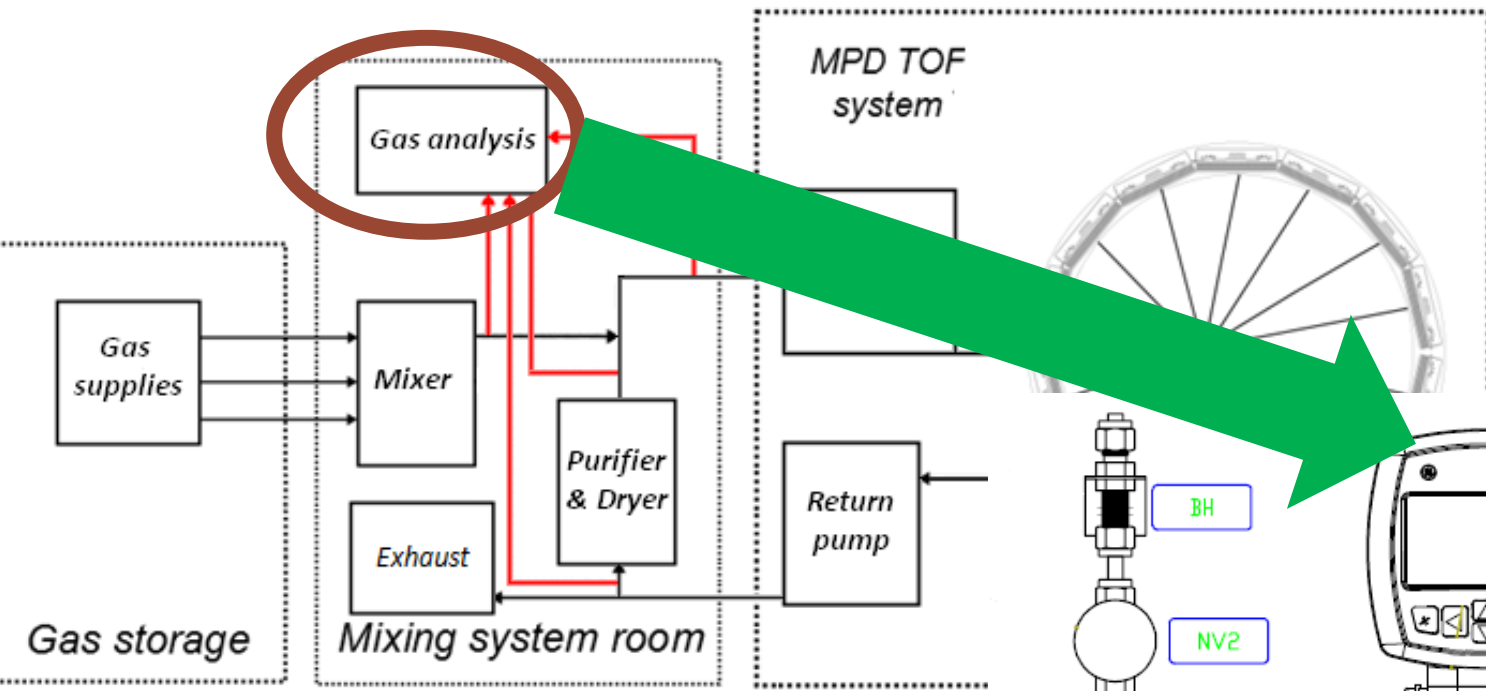


**Mixer
module**

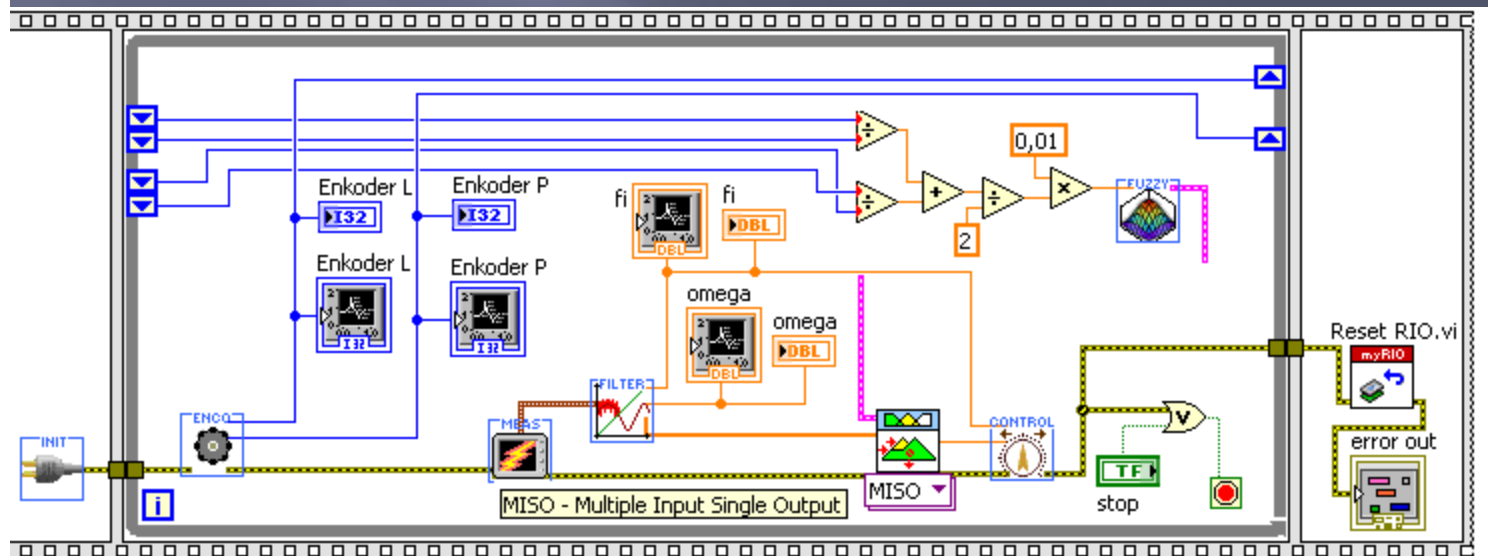
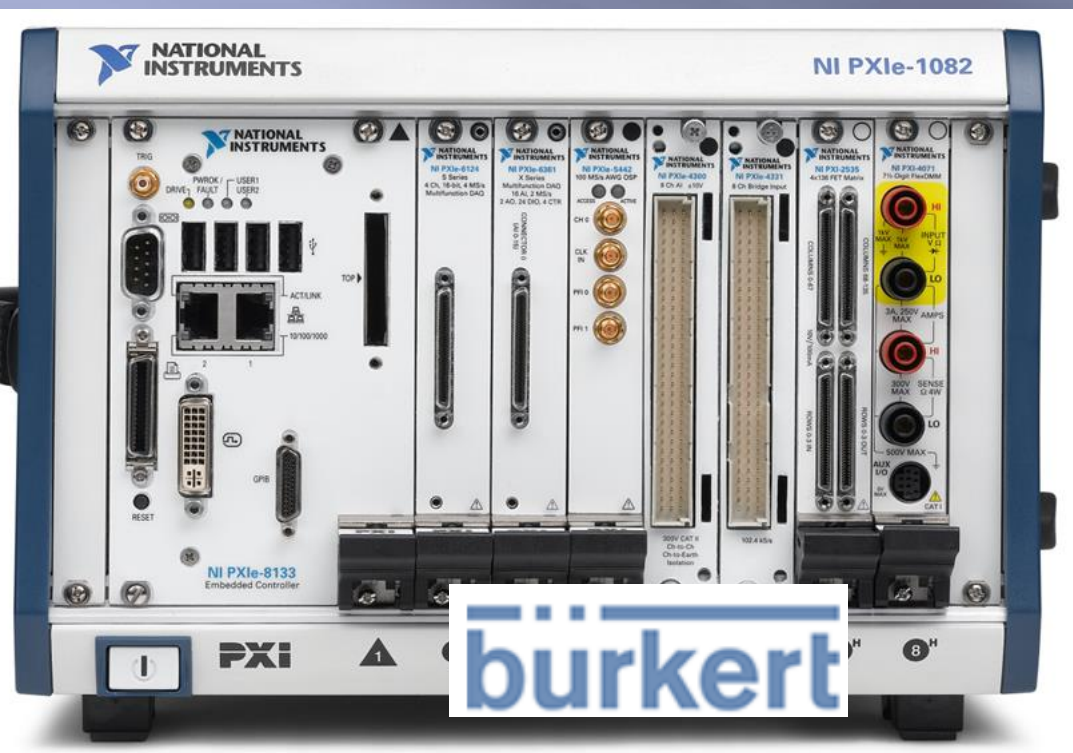
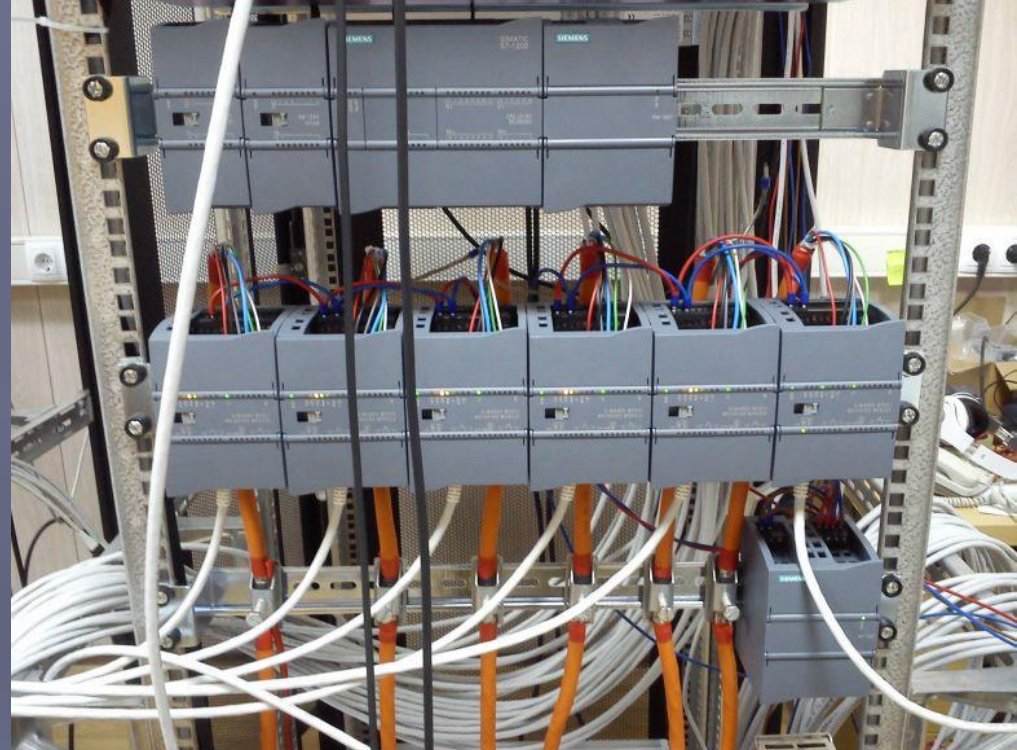
Purification

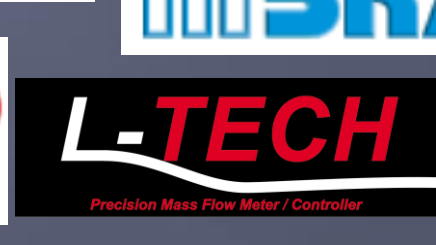
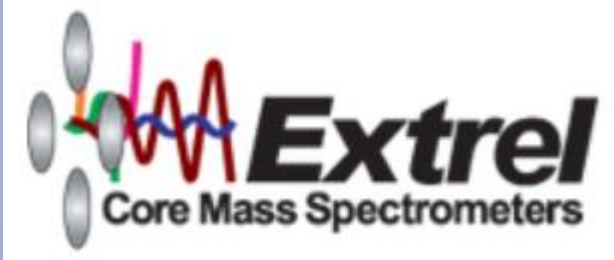


Analysis



Control system





**Thank you for your
attention !**