

ON-LINE FLOW PROTON MAGNETIC RESONANCE ANALYZER

Kashaev R.S. Kozelkov O.V., Tung Ch.V., Kien T.

*Kazan State Power Engineering University, chair. Instrument-making and mechatronics,
kashaev2007@yandex.ru*

At the chair “Instrumentation engineering and mechntronik” of KSPEU we elaborated second generation of proton magnetic resonance analyzer (PMRA-II) and sampling system. For automatic control is used microcontroller *ATMEGA 8515L* with adjusting complex and engineering *STK500* for *AVR* flesh-controllers of *Atmel* firm on the panel *SCKT 3000 D3*. Elaborated also and assembled education testing ground of on-line probe sampling system (fig.1)



Fig.1. Testing ground (stand) for studying of on-line probe sampling system and analysis of oil samples by PMRA-II.

In the left part of the figure – magnet with the probe head and coil to which by the tube oil sample is delivered by the nozzle incorporated in the conic expansion of the pipeline. Below – kinematic construction for the displacement of the nozzle in the conic expansion. On the right - *ATMEGA 8515L* controller. At the bottom – Notebook with the interface for PMR-parameters measurements.