

7th World Congress on

Petrochemistry and Chemical Engineering

November 13-14, 2017 Atlanta, USA

Free-piston drive that use hydrocarbons as the primary fuel

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In the period 2005-2015 R&P Co EKIP realized the complex of research and development work on the creation of free-piston drive. The result is a valid model sample of 5 kW, realizing diesel cycle on methane. Due to the fact that in the free-piston drive can be realized thermodynamic cycle with a pressure ratio of up to 100 and more, as the primary fuel is possible to use a wide range of hydrocarbons: Syngas, pyrolysis gas, methane of coal bed, associated oil gas, biogas, biodiesel, landfill gas, hydrogen etc. Designed in EKIP free-piston drive can be used as: driving the compressor, the hydraulic pump or the linear electric generator; generator of the syngas; generator of the working fluid for the gas turbine. At present time, R&P Co EKIP, together with the Razumovsky University, create of the pilot free-piston diesel-hydraulic pump up to 10 kW and the pressure up to 30.0 MPa, has broad prospects for use in transport and agricultural machinery. Furthermore, R&P Co EKIP, together with the Razumovsky University, developed the pilot free-piston compressor for heat pump on carbon dioxide at 100 kW.

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