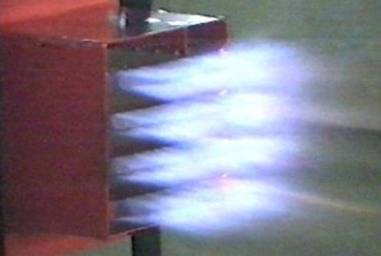
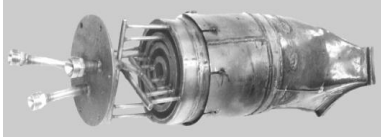





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COMBUSTION PROCESSES AND TECHNOLOGY OF FUEL BURNING

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| <p>The fundamental researches of homogeneous combustion.</p> <p>The computational method of a gaseous and a heterogeneous flame.</p> <p>Microdiffusion technology of burning of gas</p> | <p>Continuation of investigations (which had been carrying out by Kryzhanovsky Vladimir Nikolaevich from 1962 till 2010) which are devoted to the examination of an internal structure of a flame front and influence of different factors on combustion process and the design procedure of extreme characteristics of any fuel burning.</p> <p>Creation of the procedure of exact calculation of all performances of a flame and optimum initial parameters.</p> |  <p>The maximal optimisation of combustion devices at a design stage without the subsequent operational development for any gaseous and liquid fuels.</p> |
| <p>Development of highly-forced frontal devices for advanced propulsions</p> | <p>The combustion chambers of new type for GTP and the frontal devices for modernisation of all types CC have been developed and tested.</p> <p>Advantages:</p> <ul style="list-style-type: none"> - minimal pressure drop; - the maximal (> 99 %) completeness of combustion over all loadings; - minimum of fuel feedings; |  <ul style="list-style-type: none"> - the maximal uniformity of a temperature profile on an outlet; - the minimal gabarits; - lack of testbed operational development. |
| <p>Development of the new scheme of a hypersonic straight-flow air-breathing engine</p> | <p>Calculation of the optimum requirements of combustion stabilisation at hypersonic flows at burning cryogenic fuel has been carried out . The module for flight tests is designed.</p> |  |
| <p>Microdiffusion technology of burning of gas</p> <p>Designing and production of fuel-burning devices</p> | <p>By R&PC "Ecofakel" and under its licences it has been created and put into operation more than two thousand gas or oil-gas burners (MDGG type and MDGMG type), and hundreds of heat generators.</p> <p>Unit power up to 80 MW.</p> <p style="text-align: center;">Increasing of EFFICIENCY on 4 - 20%.</p> |  |
| <p>Microdiffusion technology of burning of gas</p> | <p>The burners work with all types of boilers of small and middle power, technological furnaces, installations for oil reforming, grain driers, for gases of degassing of mines, departments of machining of a paper, bitumen, beton.</p> | |
| <p>New technology of joint burning of composite propellants; systems of preparation and burning of aeromixtures</p> | <p>Installations for burning of pulverous biological substances and a coal dust (including an aerointermixtures preparation) with "highlight" from a gas or diesel (black oil) flame.</p> |  |

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| <p>New technology of liquid fuel burning (without vortex vanes)</p> <p>Designing and production of fuel-burning devices</p> | <p>Transportable heat generators on liquid fuel with power up to 10 MW with heat-transfer medium temperature from 100 to 700 °C</p> |  |
| <p>New technology of joint burning of composite propellants</p> | <p>Conversion of boilers and furnaces into the joint burning of a water-coal fuel with "highlight" by natural gas or furnace fuel</p> |  |
| <p>Application of new technology of the highly-forced devices for the combined energetic burners</p> | <p>Burners for power-generating boilers: - Lighting up and steady burning begins from "zero" pressure of gas.</p> <p style="text-align: center;">Increasing EFFICIENCY on 2– 5%.</p> |  |
| <p>Microdiffusion technology of burning of gas</p> | <p>Burners for the metallurgical furnaces, working at different velocities of air or oxygen with different temperature</p> <p style="text-align: center;">Increasing EFFICIENCY up to 35%</p> |  |
| <p>New (without register) oil burning technology</p> <p>Designing and production of fuel-burning devices</p> | <p>Automatic burners for burning of furnace fuel, waste oil, and other viscous fuel have some nozzles with possibility of their changeover</p> |  |
| <p>Designing and production of fuel-burning devices</p> | <p>Automatical heat generators with a compact combustion chamber for the modernisation of schemas of technological processes</p> |  |

The technology has five granted patents of Ukraine (CC GTP, the burners).

Monographies: 1. Phenomenological basis of controversial combustion theory, 2011.

2. Structure and calculation of a gas flame, 2012.

