

Plasmochemical Reactor With Dielectric Barrier Discharge

Khomich V. Yu.¹, Malanichev V. E.¹, Malashin M. V.¹ and Moshkunov S. I.¹

¹*Institute for Electrophysics and Electric Power RAS, 191186 Dvortsovaya nab. 18,
St.-Petersburg, Russia*

One of the most important industrial applications of low-temperature plasma is applied plasma chemistry, covering a wide range of processes.[1]

Plasma chemical reactor (PCR) was developed to study chemical reactions in the plasma dielectric barrier discharge (Figure 1).

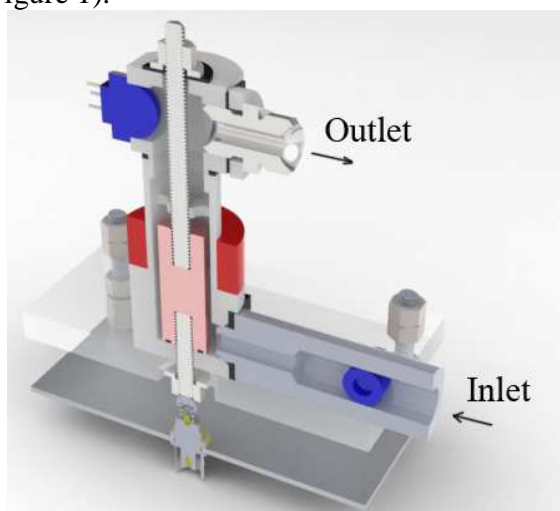


Figure 1 – 3D model PCR

High-voltage rectangular pulses were supplied with nanosecond rise time to the reactor [2, 3]. A number of experiments were carried out and parameters of discharge were determined. Also energy spectrum of electrons, plasma parameters and energy characteristics of the reactor were evaluated. The reactor was tested in ambient air at natural humidity. Homogeneous volume discharge was obtained [4, 5]. Recorded current waveforms indicate that discharge processes develop through the volume at the same time.

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