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Plasma gasification of renewable organic containing resources

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Results of plasma treatment and gasification of different wastes, first of all, renewable one (wood waste, fast growing trees, MSW, car tires and other organic containing substances) are presented and discussed. The processing is based on use of plasma-chemical convert reactor. The experiments show that the ratio between energy consumption (for plasma generation) and energy content of syngas (energy obtained) is from 1:4 to 1:6. Syngas composition has the optimal ratio of H_2 to CO, such as 2:1, which is favorable for direct production of synthetic liquid fuels. The balance calculations are confirmed by tests.

Further utilization of syngas for electricity and heat generation or for synthetic liquid fuel production is considered.

Biography

I I Kumkova has aPhD degree and graduated from Leningrad State University. She is the leading Scientist of IEE RAS. She has published about 120 papers in reputed journals. Her major interests are concentrated in physics of dense low temperature plasma, discharges in gas flows, plasma technologies for waste treatment of different types, renewable energy generation and synthetic liquid fuels production.

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