

On the efficient energy utilization of associated petroleum gas and biomass

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At present, hydrogen energy is considered as one of the main methods for reducing the anthropogenic impact on the ecological balance. The production of hydrogen should be carried out without using of fossil fuels, since this leads to CO₂ content increasing in the atmosphere. Rational, from the carbon emission point of view, it can be considered the production of hydrogen during the processing of currently burned waste-associated petroleum gases (APG). According to existing estimates, about 20 billion cbm of APG are annually flared in our country. The article describes a new technology developed in the JIHT RAS for the combined processing of APG and biomass. The products obtained during the implementation of this technology are high-purity hydrogen and carbon materials, which are in great demand in the domestic and international markets. In the course of these studies, new fundamental ideas have been obtained about the parameters of the interaction of various forms of carbon under thermal treatment. When using this technology for APG processing about 5-7% of the hydrogen produced in the world at the present time can be obtained. The results of technical and economic assessments of the developed technology industrial using, which from the point of view of the existing parameters of efficiency, are highly promising.