# A device for thermochemical treatment of wells was developed in SibFU

The scientists of School of Petroleum and Gas Engineering together with the employees of Sibir-Tehnologiya-Service company have developed a device for thermochemical treatment of wells. The development solves an oil and gas industry's urgent problem — well repair complicated by paraffin hydrate sediments.

The device for thermochemical treatment of oil and gas wells is intended primarily for cleaning paraffin hydrate sediments from the inside clearance between the walls of the tubing string and the production string. The melting of sediments is provided by heating the tubing string from the inside by initiating an exothermic reaction with inhibited hydrochloric acid. The device includes a thermophore of a chemically active substance in the form of a one-piece cylinder obtained by casting or extrusion. The thermophore consists of head and tail parts having a polymer multilayer coating and interconnected by threads into a one body. The usefulness of the development was confirmed during successful pilot tests.

"*The fight against excessive sediments formation in the wells is usually carried out by either preventing the formation of sediments or removing them. In particular, there are pipes with an internal coating of glass, enamel or polymeric composite materials, as well as chemical additives that prevent paraffin from sticking to the walls of the pipes. Many technologies have been proposed for wells cleaning, but they mainly come down to using thermal, chemical and mechanical methods. Unfortunately, none of the known methods makes it possible to clean a "dead hydrate clogged" well with an acceptable economic effect. No direct foreign analogues of the proposed solutions are found at the moment,*" said **Aleksander Azeev**, associate professor of School of Petroleum and Gas Engineering, cand. Sc. (Engineering).

More than 10 people are currently working on the project. We have carried out and defended scientific research within the framework of the START program, obtained 5 utility model patents, conducted the pilot tests, developed the design documentation, and manufactured the samples of equipment. The negotiations with potential ordering customers are also underway.

The development won a bronze medal at the IN'HUB–2022 innovators competition in Novosibirsk.

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