



# SYNAPSE SCIENCE CENTER CJSC



## FOUNDED

**in 1990**

[Grant approval is planned]

## CORE OF THE DEVELOPMENT

Software and hardware complex for surface seismic monitoring of the hydraulic seam fracturing; a method for shale gas extraction and improvement of oil extraction from the wells.

## IMPLEMENTATION

ALREADY IN **2015**

## ПЕРСОНАЛИИ

### HEAD OF RESEARCH:

Alexander Kushnir, Doctor of Physics and Mathematics

### PROJECT MANAGER:

Mikhail Rozhkov, PhD in Physics and Mathematics

## Advantages of the development

A considerable improvement of the quality of surface monitoring of the hydraulic seam fracturing (HSF) due to the use of the new OSA-technology extracting information from powerful coherent noise arising due to the operation of mechanisms at the oilfield and delivering a quality picture of HSF fissure propagation.

## Development features

**1**

HSF without monitoring can bring huge losses to an oil-mining company. At present monitoring mainly consists of borehole seismic methods. They are very expensive, e.g. monitoring of 1 borehole costs 3-6 million USD, and it is better to have 2-3 boreholes. A more economical and effective approach is surface monitoring but it is difficult because of a high level of coherent noise at the oilfield.

**2**

More and more countries worldwide are beginning to extract shale gas, which poses threat of displacement of Russian gas from the market by 2020 due to cheap prices for the shale gas. The technology is aimed at optimization of extraction of shale gas in Russia and keeping competitive advantages of our country in this market.