

ECONOMICAL BIODEGRADABLE EFFICIENT IRON SULFIDE DESCALER



INVENTION

A biodegradable descaler solution for removing iron-containing scale from wellbore, pipe, or metal-containing surface in oil & gas industry.

MARKET SIZE AND GROWTH

Iron sulfide scale is a corrosion inducing problem in oil and gas industry.

The scale reduces oil production and effects performance of downhole tools, production tubing, pipeline networks and wellbore equipment.

Chemical methods to remove this scale can either lead to heavy corrosion or have lower solubility. On other hand mechanical methods are costly and time consuming.



Fig 1. Scale deposited in downhole tubular (Tao Chen et al. 2017)

Global oilfield stimulation chemicals market is estimated to reach around USD 4 billion by end of year 2027¹

ADVANTAGES

- Cheaper than existing solutions
- Can remove iron scale in 6 hours
- Very high solubility for calcium carbonate even at room temperature
- The solution is biodegradable and less corrosive

PROJECT STATUS

- Scale removal was tested on actual field iron scale sample
- Developed system was compared with other solutions Hydrochloric acid, Glutamic Acid Diacetic Acid (GLDA), and HDC-3 for same time period under same conditions
- Solubility was 83% (83 g/lit) after 6 hrs at 125°C
- Corrosion rate was 0.04 lb/ft²
- Solution meets OECD 301B requirements for ready biodegradability

LOOKING FOR DEVELOPMENT PARTNER

We are looking for an industrial partner to evaluate the solution on iron scale samples from different areas and later field testing. The ultimate objective is to license the intellectual property (IP) to such partner for commercialization.

PATENT PROTECTION

A U.S. patent application 16/733,476 covers method of removing the scale and composition of the descaler. The IP is owned by King Fahd University of Petroleum & Minerals (KFUPM).

ABOUT KFUPM

KFUPM was established in year 1963 and is located in Dhahran city of Saudi Arabia. KFUPM currently ranks at 163 in QS World University Rankings 2022. KFUPM's Innovation & Technology Transfer office strives for taking innovation from lab to market place.

For further information please contact
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¹ <https://www.researchreportsworld.com/global-oilfield-stimulation-chemicals-sales-market-17827515>