

Geothermal Power Fiber Optic Sensing



Overview

Fiber optic sensors are highly effective in measuring temperature and pressure changes within geothermal wells. Fervo Energy is at the forefront of geothermal innovation with its pioneering pilot project located in northern Nevada. Geothermal reservoirs offer unique characterization challenges due to the harsh environment that downhole tools are subject to and the. Donate to the Prof. Juan Pestana Legacy Fund and Support Students Learn More Distributed fiber optic sensors (DFOS) can be used for a wide variety of applications. The modern FOS era started in late 1970's with the development of ultra-low losses fibers. A wide. Geothermal energy, which involves extracting heat from the Earth's subsurface to convert it into electricity or power heating systems, is one such solution.



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Fiber optic sensing has gained importance for wellbore monitoring and reservoir characterization in geothermal fields as it allows continuous, spatially highly resolved measurements.



Distributed fibre optic sensing (DFOS) solutions provide flexible, multi-parameter measurements for the exploration and exploitation of the full range of geothermal resources, from shallow borehole, ground ...



Distributed fiber optic sensors (DFOS) can be used for a wide variety of applications. Among them, distributed temperature sensing (DTS) uses the physical changes in a fiber core, as observed by ...



Fiber optic sensors are highly effective in measuring temperature and pressure changes within geothermal wells. These sensors provide continuous, real-time data which allows operators to ...



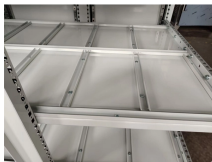
The analyses in this study show that fiber-optic sensing is an effective technology to monitor and optimize water circulation in next-generation enhanced geothermal systems.



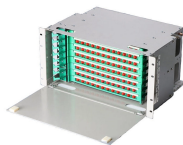
FOWell: geothermal well monitoring using distributed fiber optic sensing (DTS, DTSS). Real-time detection of temperature, pressure variations, and induced seismicity



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This pilot project serves as a first-of-its-kind industry example, demonstrating the feasibility and advantages of using fiber optic data for quantitative injection profiling in geothermal wells. The project ...



Based on developments over the past few years, it is likely that fibre-optic distributed sensing will enable surveys to be part of the subsurface geothermal characterization toolkit for the foreseeable future.



This work has been performed within the framework of CeMIE-Geo project in order to test the applicability of fiber optic temperature measurements at temperatures above 300o C within a hot ...

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