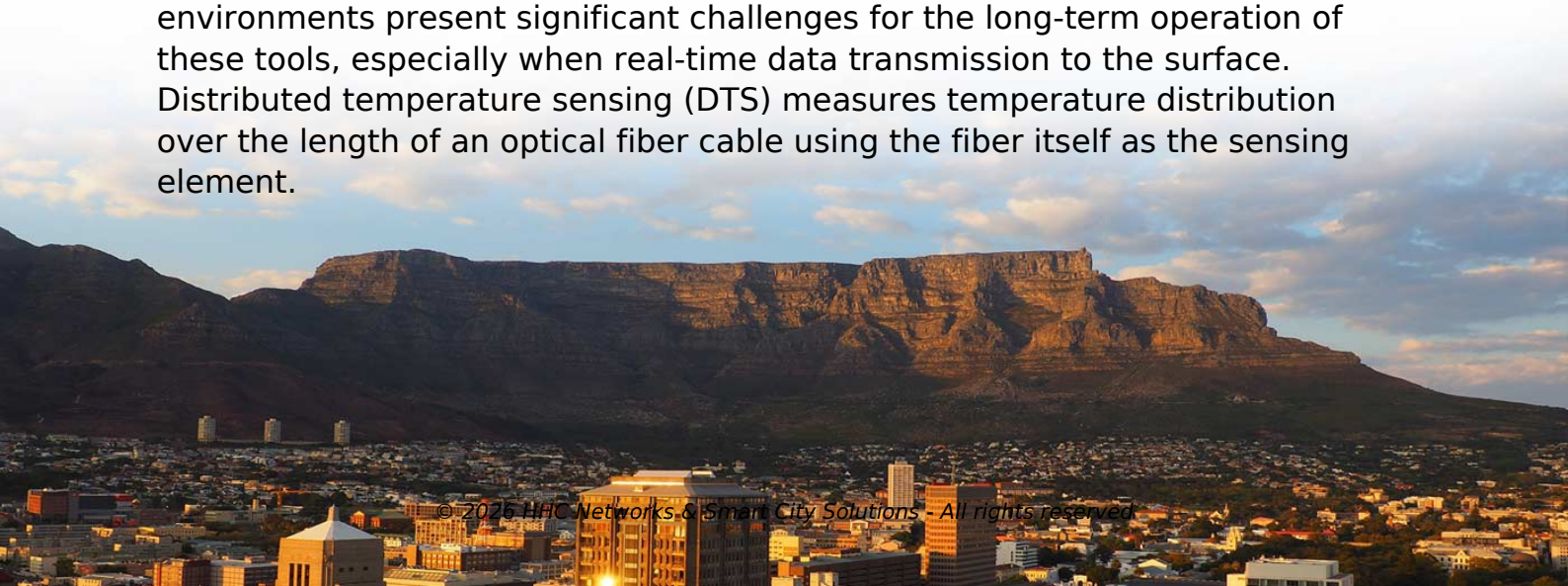
Dominic High-Temperature Logging Optical Cable Technology

Overview

This study presents the evolution of downhole fiber optics to a new hybrid electro-optical cable for coiled tubing (CT) applications. The optical fibers enable optical communication and distributed measurements such as distributed temperature and acoustic sensing. Fiber-optic high-temperature sensors are gradually replacing traditional electronic sensors due to their small size, resistance to electromagnetic. Paper presented at the SPE/ICoTA Well Intervention Conference and Exhibition, The Woodlands, Texas, USA, March 2020. The elevated temperatures, pressures, and harsh chemical environments present significant challenges for the long-term operation of these tools, especially when real-time data transmission to the surface. Distributed temperature sensing (DTS) measures temperature distribution over the length of an optical fiber cable using the fiber itself as the sensing element.



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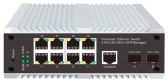
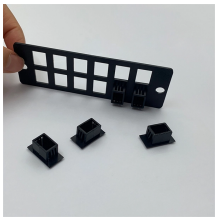


Our logging cables are the backbone of downhole data acquisition in oilfields worldwide. Engineered to withstand high-temperature, high-pressure, and corrosive environments, they ensure stable signal ...

Abstract: Fiber optic cables have the advantages of high temperature resistance, high pressure resistance, corrosion resistance, and high accuracy in measuring temperature DTS data. They are ...



With the increasing need for long-term high-temperature (HT) operation of logging tools, Sandia National Laboratories is now completing the evaluation of the four-conductor cable.

What Is Distributed Temperature Sensing? Distributed temperature sensing (DTS) measures temperature distribution over the length of an optical fiber cable using the fiber itself as the sensing ...

The range of cables for direct buried installation includes all our four basic designs: concentric core, grooved core tape, DryTech and tape in loose tubes.The cables are reinforced with corrugated steel ...

FBG sensor has the characteristics of high temperature resistance, high pressure resistance, strong corrosion resistance, and electromagnetic interference resistance, which makes it possible to use oil ...

NBGs cables support Raman, Brillouin, Ralyeigh or FBG based interrogation technologies with Raman being the most common technique for cryogenic and high temp environments.

In this study, we installed two fiber optic cables with different designs into a new well, a soft-flat cable and a stainless-steel cable, for distributed fiber optic sensing in cementing and water ...

This paper reviews the sensing principle, structural design, and temperature measurement performance of fiber-optic high-temperature sensors, as well as recent significant ...

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