

## **Listening downhole with light, fibre optics and distributed acoustic sensing (DAS) transforming the upstream oil and gas industry**

*Todd D. Bown, Jim E. Roy, David Hill, and Denis Onen*

*OptaSense*

### **Summary**

Distributed Acoustic Sensing (DAS) is a very promising and novel technique that offers many advantages over traditional wellbore surveillance methods. Permanently or semi-permanently installed fibre-optic cables in the wellbore enables cost-effective acquisition of acoustic data that can be conducted at any time, and without well intervention. In contrast to the sparse coverage by a few point sensors as used in conventional methods, DAS technology enables full and continuous coverage of the entire wellbore. DAS, often in combination with Distributed Temperature Sensing (DTS), is being used for hydraulic fracture profiling, production profiling, injection profiling, artificial lift monitoring, and the acquisition of wellbore seismic data such as VSP and microseismic. These frequent and time-lapse fibre optic based measurements are shown to provide easy access to valuable information for optimizing oil and gas recovery efforts.