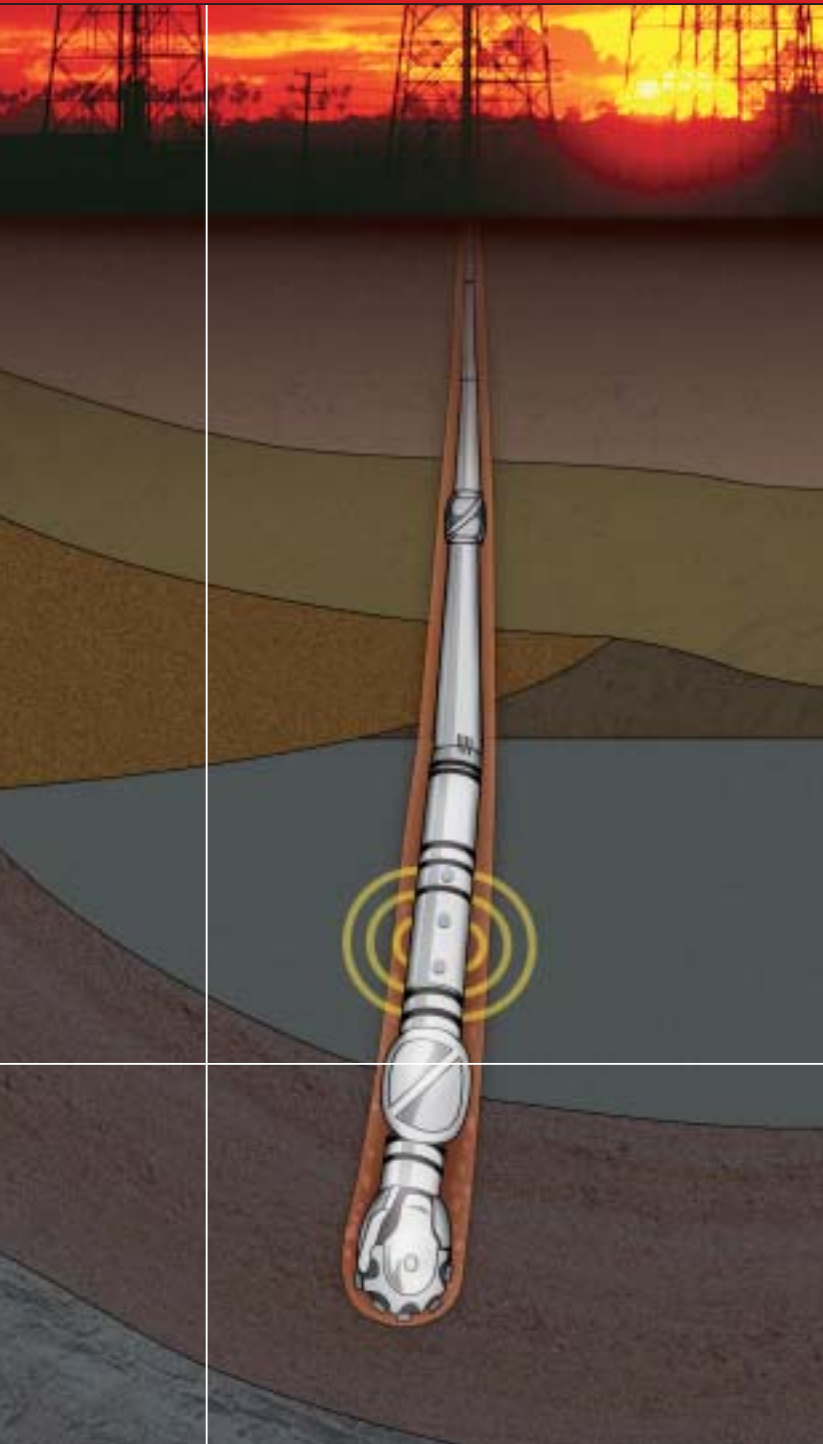


Thousands of feet down,
these sensors need to take lots
of heat and hard knocks...



The science of well logging

Oil exploration uses “well logging” to measure and map the properties of each layer of rock and fluid as test holes are being drilled.

For one type of downhole testing, neutron or gamma radiation is emitted into the surrounding rock at each stratum. Then, the resulting radiation scatter is measured...



Which reveals rock density and porosity—and also helps locate the prized hydrocarbon zones!

But detecting the scattered radiation requires very sensitive *photomultiplier tubes* (PMTs). Ones that can *remain* sensitive in the harsh downhole environment—withstanding severe shock and vibration, and temperatures of nearly 200°C!

Hamamatsu is opening
the new frontiers
of Light * * *

Sensitive and rugged PMTs

For decades Hamamatsu has been developing and optimizing PMTs—for many *hundreds* of applications...



Hamamatsu's unique ruggedized PMTs maintain sensitivity under extreme conditions.

For well logging we have made PMTs that are smaller and more robust. We have combined advanced materials with designs that perform under extreme conditions. Which may be why Hamamatsu supplies most of the PMTs used in the world's oil well logging systems!

For science and for mankind, Hamamatsu continues to open the new frontiers of Light.

<http://jp.hamamatsu.com/en/rd/publication/>

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Photon is Our Business