

MRI Technology Deals With Helium Shortage



As helium gas used in magnetic resonance imaging (MRI) scanners is increasingly becoming scarce, a UK-based medical imaging vendor continues to develop helium-free MRI systems.

In 2013, MR (Guildford, Surrey, UK) already developed the world's first helium-free technology for use in preclinical superconducting MRI systems. This breakthrough scanner does not require the traditional liquid helium cooling jacket.

The company is currently developing a 7-T helium free scanner. The new system will benefit medical MRI research, which is at risk from the global shortage of helium.

Dr. David Taylor, physicist and CEO of MR Solutions, predicts that within five years all new MRI scanners will be able to do away with the liquid helium jacket that keeps the superconducting magnet at four degrees above absolute zero -- a chilly minus 269 degrees centigrade.

"We first developed a 3 Tesla (Tesla is the power of a magnet) in 2013. Today we are developing a 7-T helium free scanner and it will only be a few years before we/the industry scales up to produce helium-free clinical MRI scanners," Dr. Taylor said.

He explained how the company developed the pioneering technology. "Following a number of years of research and development with our magnet partner, we have been able to dispense with the usual liquid helium cooling system by using a revolutionary magnet design incorporating superconducting wire. This enables the use of a standard low temperature fridge to cool the magnet to the required 4 degrees Kelvin (minus 269 degrees C)," Dr. Taylor said. "This has resulted in a scanner with improved performance, less costly to buy, lower running costs and no need for the building modification works which were required for the old bulky MRI systems."

MR Solutions' helium-free technology has revolutionised the world of preclinical MRI and hopefully will be scaled up to clinical systems so that children in the future will still be able to enjoy helium-filled party balloons.

Source and image credit: MR Solutions Ltd

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