

# New Technique for Keeping Blood Vessels Open

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Scientists at the University of Ulster are working on a new method of coating stents – the medical devices used to keep veins and arteries open – to prevent them blocking up.

The team involving Professors Jim McLaughlin, John Anderson and Paul Maguire are based at the Northern Ireland Bio-Engineering Centre (NIBEC) on the University's Jordanstown campus.

Details of their work were unveiled today in Japan at the opening of a four day conference. Professor McLaughlin presented the keynote address to the New Diamond and Nano-Carbons conference in Osaka.

He said the UU scientists are working to further develop and even commercialise a 3-D plasma coating technique, which has already been shown to be highly biocompatible and promising with regards to its mechanical properties.

Many of the team's findings have already been published in scientific journals and have attracted keen interest worldwide.

Stents are tubular scaffold structures that are inserted into blood vessels which have become narrowed and led to reduced blood flow to the body's organs.

Professor McLaughlin said: "One of the setbacks of vascular stents is the potential development of a thick-smooth muscle tissue inside the stent

cavity, the so-called neointima. Development of a neointima is variable but can be so severe as to re-occlude the vessel leading to the blood vessel narrowing again (restenosis), which often results in re-intervention.

”Considerable improvements have been made, including the use of more bio-compatible materials, anti-inflammatory drug-eluting stents, re-sorbable stents, and others.

”Fortunately, even if stents are eventually covered by neointima, the minimally invasive nature of their deployment makes reintervention possible and usually straightforward.”

”However long-term restenosis is being noted in polymer coated stents due to polymer-to-stent bare-metal adhesion failures and the build up of a thrombosis. Our group based at NIBEC are now seeking to further develop and even commercialise a 3-D plasma-coating technique, which has already shown to be highly biocompatible and promising with regards to it’s mechanical properties,” Professor McLaughlin added.

Source: University of Ulster

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