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Catheter to measure intra-arterial pressure gradients

A catheter coated in carbon nanotubes and pressure membranes that measures intra-arterial pressure changes.

IP Status: US Patent Issued; US Patent No.10,993,629

Applications

- Real-time measurement of intra-arterial blood pressure
- Simultaneous collection of pressure measurements in multiple locations along the length of the catheter

Technology Overview

Intravascular blood pressure measurements provide important diagnostic information used in the evaluation and treatment of peripheral vascular diseases. Currently, devices have a single pressure sensitive tip and can only measure one area at a time leading to inaccurate measurements. Researchers at the University of Minnesota have developed a novel catheter that is coated in carbon nanotubes with pressure membranes spaced at regular intervals. As the material deforms in shape, the resistance changes, which provides a signal indicating pressure differentiations. This novel design decreases the time needed to measure intra-arterial pressure in a region while simultaneously increasing the accuracy of the pressure measurements.

Phase of Development

TRL: 3-4
Proof of concept prototype constructed.

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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Researchers

- Sean Moen, Assistant Scientist, Department of Radiology
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- Jack Stubbs, Program Director, Department of Urologic Surgery

Technology ID

20150095

Category

Life Sciences/Human Health
Life Sciences/Medical Devices

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