



If you are interested in Endeavor Medical, please contact Nancy Saucier, Director of New Venture Development at Nancy_Saucier@uml.edu or 978-934-3212.

Endeavor Medical

Medical Device/Diagnostics

Status: Stable Prototype Available; Animal Studies; Sensor Fabrication Process Improvement On-Going

Endeavor Medical Technology, LLC (EMT) is a medical device consulting and development company founded by Steve Ferry. The UMass Lowell Optical Pressure Sensor technology has been optioned to EMT for purposes of enhancing the capability of medical devices designed for the purpose of monitoring, treating or imaging various processes within the human body. The first area of focus for EMT is to refine development of the sensor build process, which in turn could be sold as a finished component sensor assembly or be integrated by EMT into various interventional devices.

The Pressure Sensor (optioned technology by Endeavor Medical) was invented by UMass Lowell's electrical and computer engineering professor Dr. Xingwei Wang developed a miniature pressure sensor, which provides high fidelity blood pressure measurements in the catheterization laboratory. The sensor is half the diameter of the guide wire tube, therefore small enough to be inserted into it and be guided to and through the arteries. The sensor is based on the Fabry-Pérot (FP) principle of reflection.

On the sensor tip, there is a gap between the fiber core and the diaphragm. The optical light is launched into the optical fiber and part of the light is reflected back by the fibers end face. The other part of the light is transmitted to the diaphragm and reflected back. These two reflected beams interfere with each other and form the fringe. When the blood pressure is applied on the diaphragm, the gap distance changes and the fringe shifts accordingly. By demodulation of the spectrum, the applied blood pressure can be accurately measured. This novel technology has a variety of applications including:

- Fluidic pressure sensor
- Post evaluation of performance (artery opening)
- Monitor pressure during angioplasty
- Extremely useful during the initial blockage diagnosis

NVI has identified this technology because currently, there is no pressure sensor that can simultaneously achieve the minimum characteristics required for miniaturization to access tight spaces and be used in medical applications such as heart surgery or other procedures requiring blood vessel pressure measurements. As mentioned above, NVI is looking to assist Xingwei Wang and Steve Perry (founder of EMT) through:

- Early strategy development and customer assumption testing
- Pitch development and market research
- Funding strategy and initial angel introductions
- Mentor and Advisory Board development
- I-Corps funding, as well as other applicable grant sources

Additionally:

- Further market research
- Development of technical milestones and related coordination with the faculty inventor and lab
- IP Prosecution
- Initial business development where partnering opportunities are explored
- Investment and funding efforts