

## **SO MANY POLYMERS, SO LITTLE TIME**

Today's minimally invasive surgical techniques involve incisions that are small enough for a surgeon to insert a catheter into a blood vessel. These small incisions are a conduit through which instruments and devices can be inserted to treat diseased blood vessels, clean out blocked vessels, or deliver clot-dissolving medications directly at the problem area.

Vascular catheters used in minimally invasive surgery face a number of design challenges. While they must be fairly stiff at their proximal end to allow the pushing and maneuvering of the catheter as it progresses through the body, they must also be sufficiently flexible at the distal end to allow passage of the catheter tip through smaller blood vessels without causing significant trauma to the vessels themselves or to the surrounding tissue. This combination of flexibility, high tensile strength, and compression resistance is what makes designing a vascular catheter challenging.

Selecting the appropriate polymer for an optimal catheter design requires an understanding of the biological, physical, and chemical, characteristics needed as well as a thorough knowledge of the polymers that are commercially available. This article provides an overview of these elements so that OEMs can select a polymer that meets their particular needs.

To read more of O'Neil's article featured in the September 2010 issue of MDDI magazine, visit <http://www.mddionline.com/article/so-many-polymers-so-little-time>

### **Author:**



Charles O'Neil  
Senior Project Manager, PolyMedex Discovery Group

**PolyMedex Discovery Group** – Foster Compounds  
45 Ridge Road  
Putnam, CT 06260

Phone: (860) 928-4102 x108  
Fax: (860) 928-4706  
Email: [coneil@fostercomp.com](mailto:coneil@fostercomp.com)