
PIPE MEDICAL ENGINEERING

MINIMALLY INVASIVE SURGERY

Lysis catheter for adjustable and local drug delivery (2007/33)

The aim of local lysis therapy (LLT) is to deliver drugs in proximity of thrombi in blood vessels. For the first time, this novel lysis catheter offers the potential for variable control of numbers and positions of drug exit points on site, allowing optimal positioning and dosage for treatment of blood clots.

IP Holder: Saarland University/Germany

Status: A German utility patent registration was submitted (DE 20 2008 007 680.3)

Dissection catheter to execute minimally-invasive incisions for treatment of aortic dissection (2008/8)

In case of acute aortic dissection, conventional high-risk open blood vessel surgeries frequently result in life-threatening complications.

This innovative catheter-based interventional technique is a safe, advanced, minimally invasive and cost-effective alternative for treatment of aortic dissection. In contrast to conventional procedures, this new catheter-based technique will cut dissection membranes percutaneously over a defined distance, leading to pressure compensation between false and real vessel lumen.

IP Holder: Saarland University/Germany

Status: A German utility patent registration was submitted.

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***Endoscopes with micro-balloon attachments
(ZEE20030828)***

This novel and cost-effective manufacturing technology utilizes micro system technologies, to ensure production of high quality, transparent, elastic disposable balloon attachments of very small dimensions (1-5 mm) for use in fiber optic endoscopy.

These endoscopes are well suited for analysis of narrow cavities during Angioscopy, Cardioscopy and Arthroscopy. This translucent, elastic balloon element can be expanded by gas or fluids to displace adsorbing or scattering fluids, to allow optical tests within the range of ultraviolet, infrared and visible light.

IP Holder: Albert-Ludwigs-University Freiburg/Germany

Status: Granted patent DE 10356315 B4

A preliminary model exists.

***Pressure controlled micro-membrane mirror
(ZEE20050125)***

This variable micro-system manufacturing technology allows the production of various designs of micro-mirrors for use in endoscopic applications. Micro mirrors are fixed onto elastomeric membranes and are capable of changing angular and translational positions by pressure variations. While common systems operate electrostatically with potentially life-threatening high voltages, the use of a pressure-controlled actuator presents no health risk and can therefore be used in vivo. Furthermore, the mirror deflection covers a wider angular and translational range compared to state-of-the-art products. Micro-membrane mirrors can also be arranged into arrays and selected parts and can therefore be controlled individually.

IP Holder: Albert-Ludwigs-University Freiburg/Germany

Status: Applied for a German Patent (DE 10 2005 018 511 A1)

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