

MRI Compatible Endoscopic Device

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Challenge

Currently no MR compatible endoscopes are available that allow MRI (magnetic resonance imaging) guided interventions. Patients and surgeons could benefit significantly from such devices especially in spine surgery where high precision and accuracy are indispensable. The challenges for realizing such a device are the necessity of non-magnetic, autoclavable material composition for all required components and the need for compact dimensions in an MRI setting. In the following we present an innovative MRI compatible multifunctional endoscopic device especially for application in spine surgery.



PEEK prototype of the multifunctional endoscopic device

Technology

The innovative multifunctional endoscopic device consists of a rigid PEEK (Poly Ether Ether Ketone) shaft with multiple channels allowing to guide medical instruments such as pliers or other minimal-invasive instruments through the shaft towards an operation site. In addition, an optical system, carrying the lighting and camera, can be plugged into one channel of the endoscopic shaft. It is designed in a modular fashion and can easily be removed after the treatment. The PEEK shaft is intended for multiple uses and can easily be sterilized, e. g. in an autoclave.

Because the functional guiding system is separated from the optical imaging system an easy and cheap manufacturing of the endoscopic multifunction device is achieved.

Commercial Opportunity

The technology is available for in-licensing or co-development.

Developmental Status

A laboratory prototype of the multifunctional endoscope has been realized.

Patent Situation

A priority claiming international PCT-application, WO2013131578, was filed in 2013.



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