

Short Introduction of the Cooperation Research Center for Biomechanics



**Established in 2004, reorganised in 2007
in a cooperation of 17 departments and research groups**

Faculties involved:

- Architecture
- Mechanical Engineering
- Transportation Engineering
- Natural Sciences
- Chemical Technology and Biotechnology

A. Experimental methods

B. Numerical analysis

**C. Biomedical applications and
process**

D. Theoretical researches

Researches in the topic of coronary stents

Department of Materials Science and Engineering

Earlier experiments

- **1998 – first expertises**
 - **Many scientific research studies**
 - **12 MSc theses**
 - **5 PhD research programmes**
 - **R & D projects; the last one: NKFP-3A/042/004 (500 k€)**
 - **Several publications**

R&D partners:

**Hungarian Academy of Sciences,
Minvasive Ltd.**

**Cardiovascular Interventions NPC
Lasersystems Ltd.**

Institutions

Department of Materials Science and Engineering
László Dévényi, Head of Department

www.att.bme.hu

Research Group for Metals Technology of the HAS
János Ginsztler, Member of the HAS, research group leader

www.att.bme.hu/~femtech



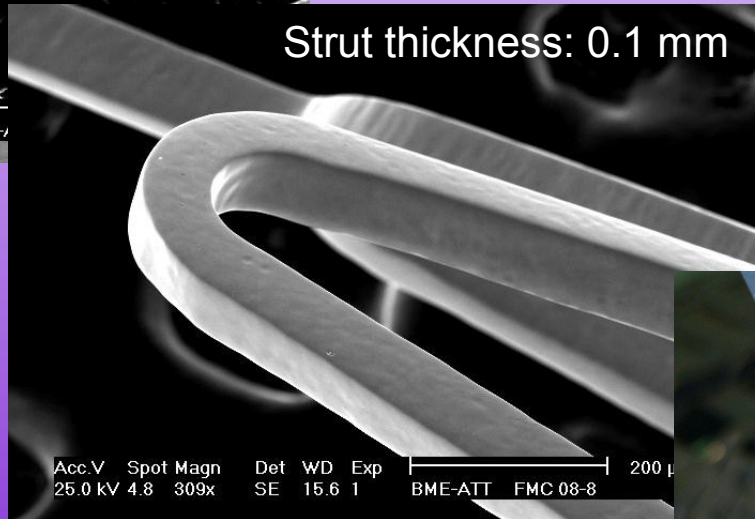
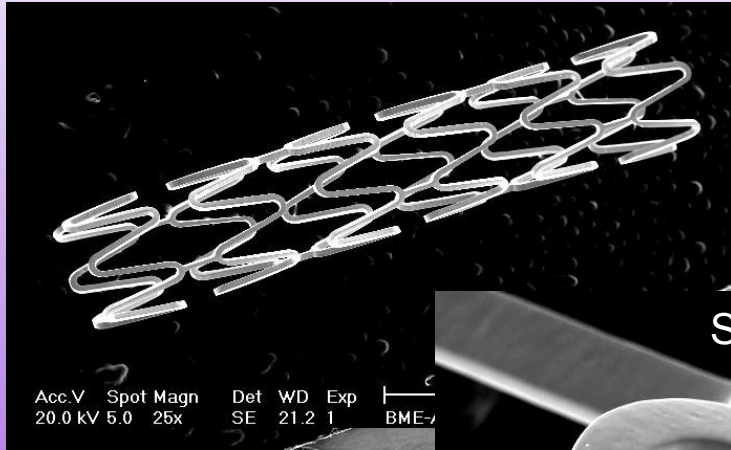
Minvasive Ltd.

Zsolt Puskás, managing director,

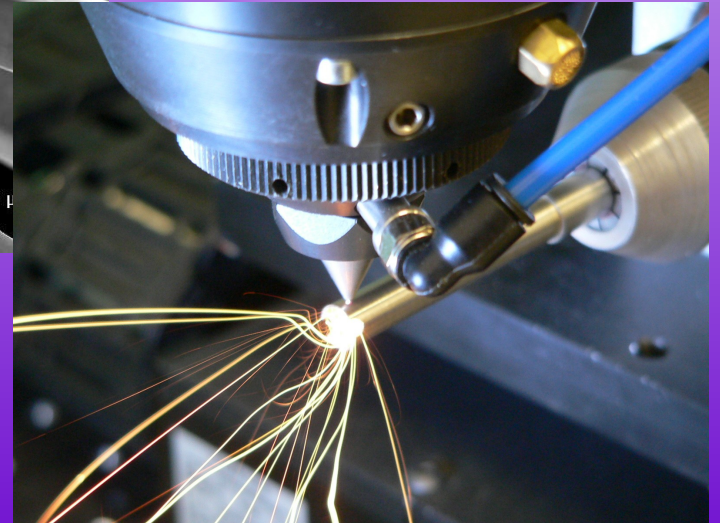
www.minvasive.hu



Results from the first research period



Laser technology



Profile



- **Medical device engineering:**
 - development of stent systems
 - examination of stent properties
 - production of stents and catheter therapy devices
 - production and examination of stent coatings
 - investigation of catheter therapy devices
- **Laser microprocessing** of high precision devices, which materials are stainless steel, Co-alloy, etc.

PhD research programs as potential topics to cooperation

Eszter Bognár: Passive and active coatings and coating technologies of endoprosthesis

György Ring: Preclinical investigation of coronary stents and other endoprosthesis

György Meszlényi: Laser beam technologies of coronary stents

Péter Szabadíts: Functional properties and materials of devices of endovascular cathetertherapy

Tibor Balázs: Stability of functional and mechanical properties of implantable stent fixed devices used in pacemaker therapy