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 **Fraunhofer**

INTERNATIONAL EXHIBITION STUTTGART
APRIL 12-14 | HALL 3, BOOTH A10

Research of practical utility lies at the heart of all activities pursued by the Fraunhofer-Gesellschaft. Founded in 1949, the research organization undertakes applied research that drives economic development and serves the wider benefit of society. Its services are solicited by customers and contractual partners in industry, the service sector and public administration.

At present, the Fraunhofer-Gesellschaft maintains 67 institutes and research units and employs a staff of 24,000 qualified scientists and engineers, who work with an annual research budget of more than 2,1 billion euros.

With its clearly defined mission of application-oriented research and its focus on key technologies of relevance to the future, the Fraunhofer-Gesellschaft plays a prominent role in the German and European innovation process.

At the Medtec 2016 several institutes of the Fraunhofer-Gesellschaft are presenting themselves with current researches in different medical sectors. This year the focus is on clinical diagnostics, with exhibits like μ FACS for detecting pathogenic germs, cells and marker in blood, as well as on the further development of implants and medical instruments. On display are for example ceramic implants or a surgical spreader.

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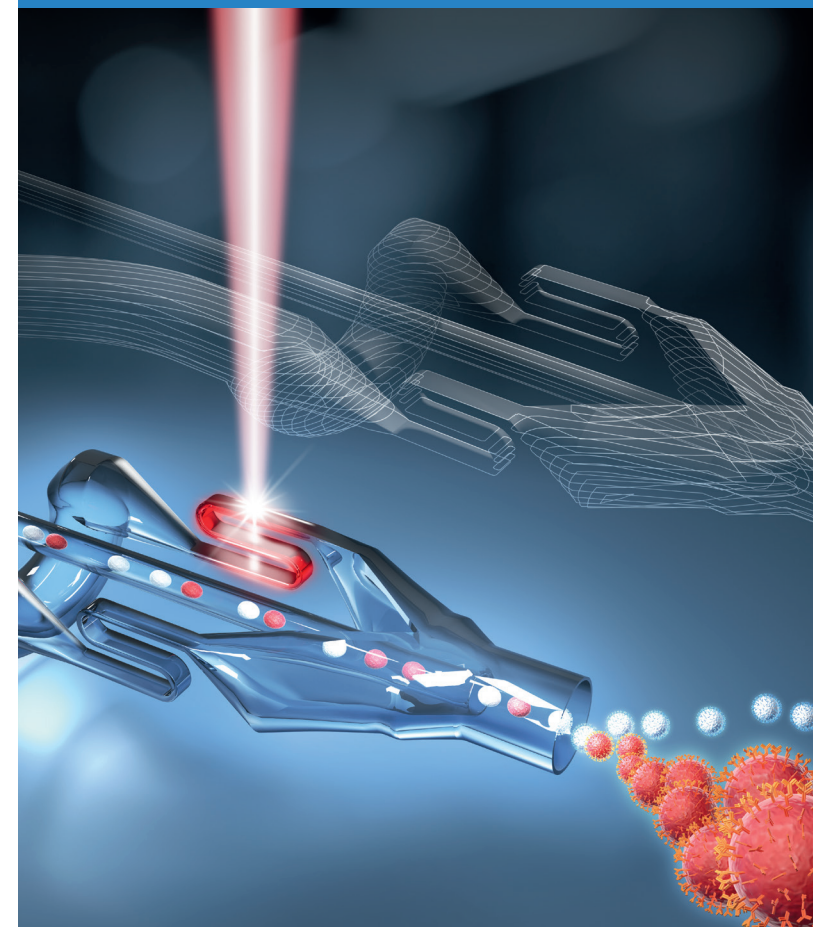
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MEDTEC 2016





Fraunhofer Institute for Machine Tools and Forming Technology IWU

Implants and Components

- Lightweight tumor endoprosthesis with improved tissue integration
- Surgical spreader with optimized load distribution and ergonomic design
- Surgical aspirator consisting of shape memory alloy for a gentle removal of brain tumors
- Orbital cavity implants for oral and maxilla-facial surgery
- Therapeutic device for treating adolescent scoliosis
- Adaptive hip stem with shape memory components for improved anchoring in the osseous structure

Artificial Joint – Endoprosthesis Network

- Measurement system for hip endoprosthesis for objective determination of the leg length centered to the hip joint and to determine the hip rotation center

Kinetek – Locomotor System Network

- Shape memory implants

smart³ | materials – solutions – growth

- Active positioning cushion "Cumulino" for counteracting skull asymmetry in premature babies / infants / toddlers preventively and curatively

Fraunhofer Institute for Manufacturing Engineering and Automation IPA; Project Group for Automation in Medicine and Biotechnology PAMB

- Accelerated development cycles with Hardware-in-the-Loop testing, parallel testing of hardware and software
- In the actuator integrated position sensing for precise and miniaturized applications
- Systems for automatically tissue processing enable robust and reproducible generation of cellsuspensions

Fraunhofer Institute for Applied Polymer Research IAP

- Development and production of implants, in particular for the area of ophthalmology
- ArtCornea® and ACTO TexKPRO, selective surface modification for clear vision and good tissue tolerance (no medical devices)

Fraunhofer Institute for Laser Technology ILT

- Microfluidic sorter to detect, separate and pick up pathogens and cells in the blood without harming the cells' viability and capability of forming colonies
- In vitro diagnostic device for particle based multiplex testing of up to 16 different analyte molecules
- Handpiece with integrated laser scanner for laser surgery and dermatology
- 3D Scaffolds and Implants

Fraunhofer Institute for Ceramic Technologies and Systems IKTS

Optical diagnosis methods for medical applications

- Contact-free, quick inline sample analysis with optical coherence tomography (OCT)

Additive manufacturing of ceramics

- Incredible design solutions for advanced ceramic products
- Biocompatible, patient-specific bone replacement
- Tailored microreactors with 3D structuring for improved mixing processes