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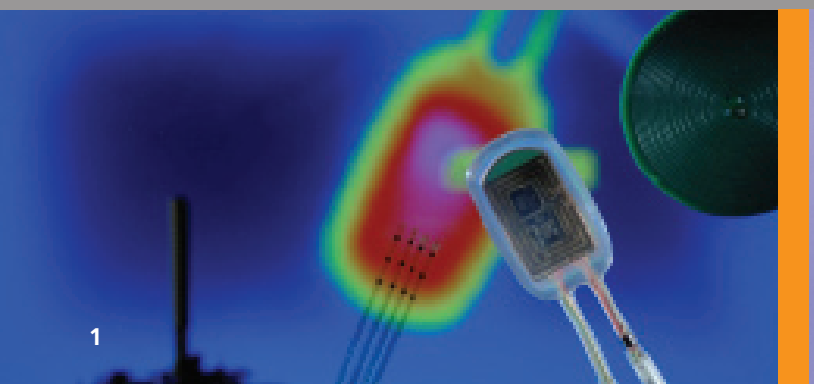
FRAUNHOFER-INSTITUT FÜR BIOMEDIZINISCHE TECHNIK IBMT



1 *Intelligent implant for the control of upper limb functionality.*
2 *Controll unit: System for monitoring oral wetness and treatment of dry-mouth syndrome (Xerostomia).*

BIOTELEMETRY

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The Market

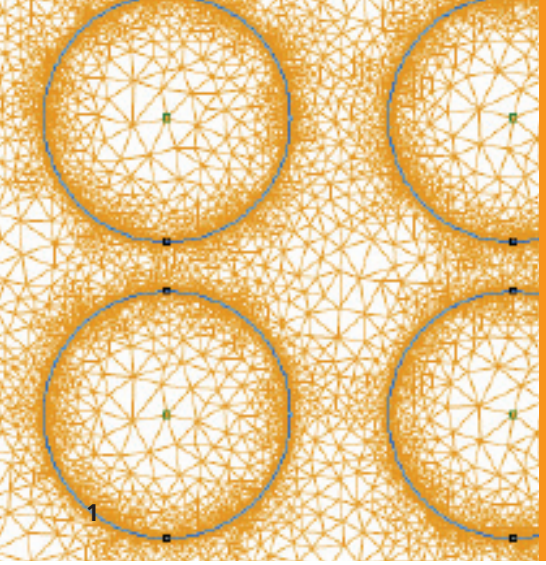
Biotelemetry devices are technically challenging since they impose particularly highly demanding requirements to the application-oriented research & development, design, production, testing and regulatory approval.
Innovations often produce the need to reconsider biocompatibility and biostability issues, patient security, reliability over the complete service life as well as compatibility with other medical and non-medical devices.
Miniaturization, efficient and space-saving powering, wireless power and data transfer between external and implanted modules as well as innovations in encapsulation and housing are key issues for the future of biotelemetry markets.

Technology Platform

The technology platform „Biotelemetry" forms the basis for various medical and technical applications.

Wireless telemetry systems as seen here are intended for:

- Assessment of physiological and technical signals/parameters
- Biomonitoring as well as manufacturing (production process) control
- The mode of operation of medical implants can be designed with and without own internal energy sources.



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Area of Expertise

- Various technologies such as inductive (LF, RF, including RFID technology), optical transcutaneous IR and wireless transmission
- Development of size-optimized sensor, actuator and communications technology
- Passive sensor systems with wireless energy/data transmission
- Development of electronics especially for biomedical implants
- Wireless energy transmission to deep-lying implanted devices
- Wireless energy/data transfer through metallic housings
- Optimization of coil geometries for the simultaneous wireless communication, data and energy transmission
- Development of antennas for data transmission (MICS band) through biological tissue

Our Offer

- Conception, design, development and prototyping services of biotelemetry devices for various applications
- Close cooperation and communication with the customer to meet specific demands
- Ensuring compliance with relevant standards

1 *Discretisation grid for electro-magnetic field simulation based on Finite Element Method (FEM).*
2 *Intelligent implant: Closer look without energy-supply coil.*