

## **Antennen Design für tief implantierbare Sensor-Transpondersysteme in der Medizintechnik**

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### **Abstract**

The use of sensor transponder technologies in medicine opens valuable possibilities in therapy of human cardiovascular system diseases, for example cardiac insufficiency. Especially for applications where a sensor transponder is deeply implanted into human body are several requirements, that has to be keep in mind. These are a high transmission range and low transponder antenna dimensions. Today, no systems exists that meets these requirements. This work deals with the analysis and optimisation of antennas for such systems. Antenna characteristics will be investigated regarded to the influence of encapsulation and human tissue. With the help of mathematical expressions that are derived in this work, optimizations of reader and transponder antenna parameters are possible.