

SENSORIZED HEART VALVE PROSTHESIS

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A new sensorized Heart Valve Prosthesis (HVP) for **early detection of subclinical valve thrombosis** by means of continuous monitoring of valve leaflet motion and its alterations.

Patent coverage: EU, USA, CN

Inventors: E. Marcelli

INVENTION

The sensorized HVP is able to early detect a subclinical valve thrombosis. By means of an electric impedance measurement (**IVI, IntraValvular Impedance**) valve leaflet motion is monitored. The electrodes embedded in the structure of the HVP can measure IVI since they generate a **local electric field altered** by the moving valve leaflets during the cyclic opening/closing.

A smartphone-sized **external reader**, wirelessly powers and interrogates the implanted sensorized system to remotely retrieve information on valve leaflet motion and to **send alert to physicians** in case of reduced/altered opening/closing leaflet dynamics.

ADVANTAGES

- tailoring of anticoagulation therapy
- reduction of patient mortality
- improvement of patient quality of life
- improved healthcare efficiency and efficacy
- higher patient's awareness

APPLICATIONS

- wireless medical devices
 - implantable cardiovascular device
- patient-centric care and personalized
- medicine

CONTACTS

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