

## Workshop »Coatings for Biomedical Applications«

### Advanced surfaces for orthopedic endoprosthesis

Dr. Ernst-Dieter Klinkenberg

*DOT GmbH, Rostock*

[klinkenberg@dot-coating.de](mailto:klinkenberg@dot-coating.de)

Modern endoprosthesis have to serve at least for fifteen years and therefore an appropriate surface design is necessary. This surface design has to support the functional side of the joint replacement as well as to satisfy the biological requirements. Reliable functionality is supported generally by wear reducing ceramic coatings in several flavours. Biological requirements namely the stable fixation of the implant within the bone can be achieved by bioactive coatings, often CaP coatings.

Nowadays the challenge is to combine all these required design aspects with an enhanced antibacterial functionality to avoid implant infections at all therapy stages, at the operation, timely after operation and very late at rehabilitation.

At its best an appropriate surface design also helps to prevent aseptic loosening of joint replacements.

Within this speech some practical aspects of current endoprosthesis surface design according to the indicated criteria are discussed and some guesses of further developments are presented.