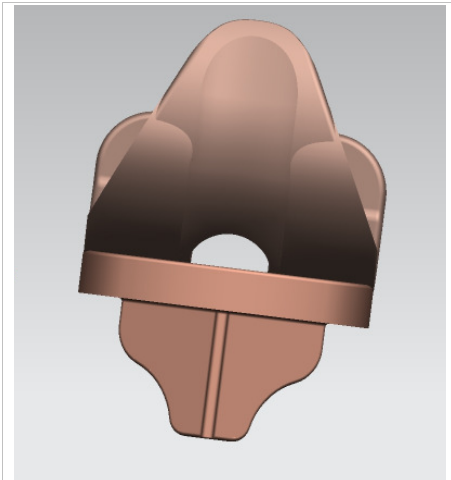


Challenge

Total knee replacement is a state-of-the-art treatment for patients suffering from osteoarthritis or rheumatoid arthritis; about 500 000 surgical procedures are performed annually worldwide. Implants nowadays consist of metal femur and tibia parts connected by a polyethylene (PE) inlay mimicking the functionality of the meniscus. Implant durability (currently 10-15 years) is a major concern: The most frequent cause for implant revision is osteolysis caused by wear debris from the inlay. As new implant designs eliminating the need for PE inlays are currently under research, bioceramic materials have attracted attention, since their biocompatibility and wear resistance are excellent. However, the benefits of ceramics can often not be exploited because of the brittle character of the material which tends to break under mechanical stress as well as the difficulty of fabricating bioceramics into the necessary prosthetic shapes.



Isometric Computer Model of a Knee Implant Design

Technology

A new design for a ceramic implant for total knee arthroplasty reduces the risk of stress-induced material fractures, thus eliminating the need for PE

inlays in implants. The design of the implant reflects the anatomical and biomechanical properties of the knee joint in terms of flexion and rotation. The technology is complemented by a novel finishing process resulting in a congruent surface of the implant.

Commercial Opportunity

In-licensing opportunity or cooperation for further development and adaptation of the implant is possible.

Developmental Status

Prototypes have been analyzed with regard to the desired properties.

Patent Situation

A European patent application has been filed in 2009.

Berlin
Braunschweig
Hamburg
Hanover
Munich
Neuherberg

Ascenion GmbH
Herzogstraße 64
D-80803 Munich
T +49 (0) 89 31 88 14 - 0
F +49 (0) 89 31 88 14 - 20
info@ascenion.de
www.ascenion.de