Some partner expectations

"NEWBONE consortium of 12 high tech companies and four universities from ten countries is committed to develop novel bone implants utilising reinforced biocomposite material technology".

Coordinator Professor Pekka Vallittu, University of Turku, Finland

"With the total investment of nearly 7 million euros the consortium will increase the turnover of European implant industry and enhances the competitiveness of European industry in the market."

Dr. Esa Suokas, ConMed, ??? Biomaterials, Finland

"The European implant industry may take the role of a global leader in the niche sector of load-bearing bone implants".

R&D Director Philippe Lambert, Medacta, Switzerland

"We believe these novel biostable and biodegradable implants to be the most advanced health care solution in the world".

Professor Hannu Aro, University of Turku

"The future products based on technical excellence of European partners will improve the quality of life and health of the treated patients".

Coordinator Dr.Saara Lampelo, Acasiatrade Ltd.

Contact Information

Coordinators

Dr. Saara Lampelo
Acasia Trade Ltd
Phone: + 358 400 66 63 66
E-mail: saara.lampelo@acasiatrade.com

Prof. Pekka Vallittu
University of Turku
Turku Biomaterials Centre
Phone: +358 40 574 82 00
E-mail: pekka.vallittu@utu.fi

Consortium Leader

R&D Director Philippe Lambert
Medacta International SA
Phone: + 41 91 696 60 60
E-mail: lambert@medacta.ch

Website
www.hb.se/ih/polymer/newbone

UNIVERSITY COLLEGE OF BORÅS
SCHOOL OF ENGINEERING

Production: University College of Borås, Sweden, August 2007

Development of Load Bearing Fibre Reinforced Composite Based Non-Metallic Biomimetic Bone Implants

An Integrated Project for SMEs

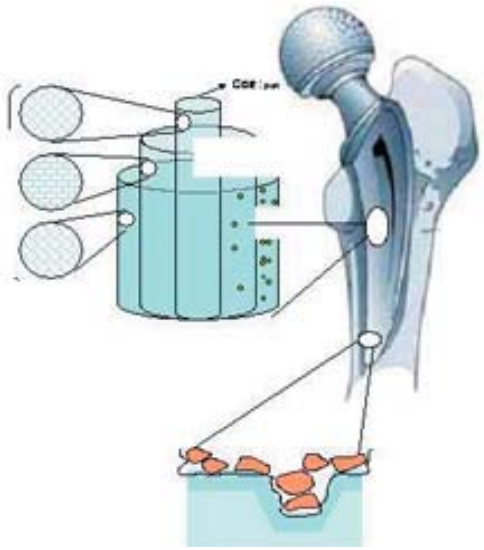
6:th EU Framework Programme for Research, Technological Development and Demonstration (2002-2006)

Nanotechnologies and Nanosciences, Knowledge Based Multifunctional Materials, New Production Process and Devices

NEWBONE

Newbone

Development of load-bearing fibre reinforced composite based non-metallic biomimetic bone implants.



Project Description and Objectives

The project focuses on the research and development of a new fibre-reinforced composite (FRC) material for load-bearing implants. The main objective is to produce, at prototype level, resorbable fixation devices in knee/shoulder ligament repair and nonresorbable bone fixation devices for reconstruction if large bone defects. Studies will be conducted on the use of the developed materials and technologies for complete implants (hip stem, knee) and spine applications.

Project Stucture

The whole project duration is structured as five successive steps (S1-S5), each one of which is related to specific tasks and findings. These are the following:

S1: Development of the proper implant material (FRC) and matrix formation. Biomechanical assessment.
S2: Adaptation of the surface properties (porosity, addition of bioactive fibers and/or coatings, functionalisation etc.)
S3: Characterisation and testing of the structure developed.
S4: Formulation and adaptation of all processing, manufacturing issues
S5: Standardisation and commercialisation of the final product. Training of end-users.

Expected Results

The global need for hip implants only is estimated to be around one million annually. The project is expected to have significant impact on the quality of life of patients with a hip stem or knee implant combined with minimised risk of complications and costs. Also the respective surgical procedures are expected to be less invasive leading to significant shorter treatment times.

Project Partners

SMEs

AcasiaTrade Ltd Oy	Finland
INGEO SNC	Italy
Integra	Italy
Materialia S.r.L	Italy
Medacta International SA	Switzerland
NanoBioMatters S.L.	Spain
FALEX Tribology NV	Belgium
Pyrogenesis S.A.	Greece
Rescoll Technological Center	France

Large Industry

ConMed Linvatec Biomaterials	Finland

Research & Higher Education

CSEM	Switserland
AIN	Spain
University of Cambridge	United Kingdom
University College of Boras	Sweden
University of Trieste	Italy
University of Turku	Finland

Project Duration

Start: 1st December 2006
End: 30th November 2010

Project Budget

Total costs: 6.5 Million Euro
Project Funding: 4.4 Million Euro