

## Laser induced soldering of articular cartilage

Diseases of the musculoskeletal system are often caused by injuries, inflammation or degeneration of articular cartilage in human and veterinary medicine as well. Repair of damaged articular cartilage is poorly and either fails completely or is characterized by formation of fibrocartilaginous repair tissue of minor value. One therapeutical strategy is application of cartilage grafts cultivated from autologous chondrocytes, as matrix associated chondrocyte implantation or creation of scaffold free cartilage grafts. The appropriate fixation of these tissue grafts remains a challenge. Currently used bonds, suture techniques as well as pin systems do not offer satisfying results (Brehm et al. 2006, Bekkers et al. 2010).

Therefore a new technology for fixation of articular cartilage grafts was to develop basing on laser induced coagulation of a dye doped protein, i.e. bovine serum albumin (BSA) enhanced by indocyanine green (ICG) (McNally et al. 1999). This technique allows soldering of tissue components at a low energy level and thereby preventing thermally induced damages.

### References:

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