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日本機械学会北海道支部 バイオメカニクス懇話会  
第42回講演会

(共催：日本機械学会北海道支部)

主査 大橋 俊朗

下記の要領にて第42回講演会を日本機械学会北海道支部特別講演会との共催として開催いたします。皆様のご参加をお待ちしております。

記

日時：2023年8月3日(木)，17:00～17:45

場所：北海道大学工学部工学部 A1-17

講演：

「A personalised 3D-printed prosthetic joint replacement for the human jaw: From implant design to implantation」

A/Prof David Ackland

Deputy Director of ARC Training Centre for Medical Implant Technologies, University of Melbourne, Australian Research Council Future Fellow, Australia

**Abstract:**

The jaw joint, or temporomandibular joint (TMJ), facilitates chewing, talking and yawning, and is commonly afflicted by painful, end-stage joint conditions such as osteoarthritis, trauma, and cancer. There are few surgical options available to treat the broad-range of complex anatomical deformities of this joint that present clinically. A personalised 3D-printed prosthetic jaw joint was developed by combining medical imaging, three-dimensional computer modelling and biomechanical testing. After the first successful implantation in a patient with condylar aplasia (missing a jaw joint), the prosthesis concept was spun-out into a Melbourne start-up, with over 300 devices implanted to date. This project illustrates the critical importance of computational modelling in implant design and estimation of implant functional performance. The findings continue to provide guidance in patient and implant selection, surgical planning and rehabilitation following jaw joint replacement surgery.

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