

**Topic of the Speech:**

Reconfigurable Exoskeleton for Effective Rehabilitation
Treatment in Residential Settings

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Professor Shane Xie, Ph.D., FIPENZ, is the Chair of Robotics and Autonomous Systems and Director of the Rehabilitation Robotics Lab at the University of Leeds, and he was the Director of the Rehabilitation and Medical Robotics Centre at the University of Auckland, New Zealand (NZ, 2002-2016).

He has more than 28 years of research experience in rehabilitation robotics and exoskeletons. He has published more than 400 refereed papers and 8 books in rehabilitation exoskeleton design and control, neuromuscular modelling, and advanced human-robot interaction. He has supervised more than 15 postdocs, 62 PhDs and 80 MEs in his team with funding of more than £27M from five countries since 2003.

His team has invented three award-winning rehabilitation exoskeletons (CARR, HuREx and Soft-Wrist). He is an expert in control of exoskeletons, i.e. impedance control, adaptive control, sliding mode control, and iterative learning control for the world-renowned Rex Bionics exoskeleton.

He has received many distinguished awards including the New Zealand Science Challenge Award, the David Bensted Fellowship Award, and the AMP Invention Award. He is a Fellow of the Institute of Professional Engineers of New Zealand and the Technical Editor for IEEE/ASME Transaction on Mechatronics.