

## **PhD position in Neuromuscular control**

Proprioceptive reflexes are important to stabilize and control human movement and posture. The signals from sensor in the musculoskeletal system, like muscle spindles, are integrated at the spinal cord with central commands from the central nervous system to activate the muscles. In neurological disorders (Parkinson's disease, Stroke, Complex Regional Pain Syndrome) the integration at the spinal cord may be disturbed resulting in motoric dysfunctionalities.

One PhD positions are available within the TREND project, sponsored by a Dutch government BSIK grant. TREND (Trauma RElated Neuronal Dysfunction) is a consortium of Dutch medical and technological universities, and industry that integrates research on epidemiology, assessment instruments, pharmacotherapeutics, proteomics, and genetics in order to explore causes, diagnosis and treatment for Complex Regional Pain Syndrome type 1. The consortium aims to develop concepts on disease mechanisms that occur in response to tissue injury, its assessment and treatment.

### ***Job description***

Function title: PhD experimental methodology

At the Man-Machine Systems group methods are developed to quantify proprioceptive reflex strengths during posture in humans. Using robot manipulators the position and/or motions of patients will be perturbed, and the response measured. From these measurements the reflexive strengths settings in the spinal cord can be calculated. Goal of the project will be to relate the altered reflex strengths to other symptoms and measurements in the CRPS patient group

### ***Requirements***

Required education/skills: University Graduate

We are looking for an enthusiastic candidate having a M.Sc. degree and a strong background in dynamics. Affinity with the field of human movement science, biomechanics and human motion control is an advantage. Please send applications including your Curriculum Vitae, list of three references, list of publications with a summary of your M.Sc. thesis and a cover letter stating your motivation to Prof. F.C.T. van der Helm, Man-Machine systems & control group, Fac. of Mechanical Engineering, Delft University of Technology, Mekelweg 2, 2628 CD Delft.

### ***Additional Information***

Additional information about the vacancy can be obtained from:

Prof. dr. F.C.T. van der Helm

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