

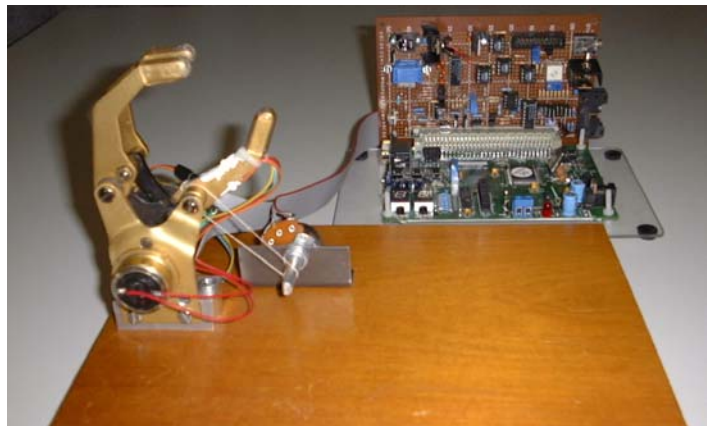
Shoulder Controller for Upper Limb Prostheses

A project being continued at the Centre for Biomedical Engineering and REHABTech is an upper limb prosthesis controller for the shoulder. The goal is to achieve similar properties as the conventional mechanical body-powered prostheses, that is, good feedback regarding displacement, velocity, and force in the prehensor in comparison to the myo-electric driven prostheses. The mechanical body-powered prostheses use a cable to transmit the movement of the shoulder to the prehensor. The cable also transfers the force in between the fingers back to the shoulder. Disadvantages include uncomfortable to wear, the force transferred to the shoulder depends on how far the prehensor is closed and the displacement of the prehensor is proportional to that of the shoulder.

This project attempts to replace the mechanical cable by sensors, actuators, electronics and a microprocessor. With this concept it is possible to avoid the above disadvantages. The electrical connection between shoulder and harness could be very flexible and with no force in it. It would even be possible to operate it wirefree. Wearing the prosthesis should be much more comfortable.

As an intelligent part of the system, the microprocessor is able to use several mathematical functions to transfer information from shoulder to prehensor and back to the feedback system — an easier way to control the prosthesis and get better information about the objects in the prehensor.

If it is possible to achieve similar properties to that of the mechanical prostheses (with their advantages) it could be an alternative to the myo-electric controlled prehensors but with better feedback. Work is currently concentrating on the mechanical force feedback aspect of the system.



WELCOME!

Two new students have joined us. We would like to welcome Marijke van Steijn and Loes Huis in het Veld from the Haagse Hogeschool Holland. Marijke and Loes and will be with **REHABTech** for the next three months, continuing the research on previous students CAD/CAM project.



Loes



Marijke

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INTERNET - <http://www.monash.edu.au/rehabtech/>

Positions Vacant

Please visit our website www.monash.edu.au/rehabtech for detailed information on the following vacancies.

Project Officer, Prosthetics and Orthotics Program—SYDNEY

Full-time or part-time

Fixed Term for three years; possibility of renewal for a further two years

Closing date: 11 October, 2002

The Bachelor of Science (Prosthetics and Orthotics) is a new initiative at UNSW in collaboration with industry partners. The program needs a skilled prosthetist/orthotist to assist the Director with development and maintenance of course materials and in the delivery of the program. This program is unique in that it will be largely delivered in distance teaching mode with on-line resources and supervised practical tasks. Full position descriptions can be obtained from pando@unsw.edu.au. and enquiries may be directed to School of Medical Sciences, University of NSW, Sydney. 2052. Phone: (02) 9385 0415 Fax: (02) 9385 2866 <http://www.med.unsw.edu.au/prosthetics/>

Orthotist, Orthotist/Prosthetist—GEELONG

Full Time

An exciting opportunity exists for a dynamic orthotist to join our innovative and progressive department on a full time permanent basis. Geelong Orthotics provides both public (Contractors for Barwon Health Geelong Hospital) and private orthotic services. The diversity of patients managed includes, acute, rehabilitation, orthopaedic, sports and specialist paediatric services. The successful applicant will have relevant orthotic experience, be team oriented and patient focused. Managerial duties will also be required for certain parts of the year.

Eligibility: A degree/diploma in prosthetics/orthotics. Eligible for membership of the Australian Orthotic Prosthetic Association.

Enquiries to Ben McMurtrie Phone: (03) 5224 2200 Fax: (03) 5223 3229 Website: www.geelongorthotics.com.au

COMING EVENTS

10–11 October, 2002	International Symposium on Stroke Rehabilitation Contact Different Strokes Symposium Secretariat, PO Box 6129, Halifax Street, Adelaide SA 5000. Tele: (08) 8227 0252 Fax: (08) 8227 0251 Email: strokes@sapro.com.au
16 October, 2002	Australian Orthotic Prosthetic Association (Victorian Section) Annual General Meeting at 6 pm, Royal Children's Hospital, Contact G Burchall (03) 93455870/email: burchalg@cryptic.rch.unimelb.edu.au
24 October, 2002	Lower Limb Orthotic Seminar: Joint Prescription & Carbon Fibre Lamination Technique John Scott House, Room 3, La Trobe Uni at 2-5pm
31 October–1 November, 2002	Material Science & Prosthetic/Orthotic Design Course: Maximizing Patient Safety Contact RehabTech (03) 9528 1960/email: rehab.tech@eng.monash.edu.au

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