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PRESS RELEASE

CIT STUDENT WINS FIRST PRIZE AT “SPEAK OUT FOR ENGINEERING” FINALS

Cork Institute of Technology student, John Roberts, has picked up First Place and been named as Outright Winner of the Speak Out for Engineering Award 2013 for "Design and Development of a Wheelchair Enablement Device".

The Speak Out for Engineering Finals Ireland 2013, adjudicated on by a distinguished panel drawn from both academia and industry, is a prestigious engineering competition open to all undergraduate and postgraduate engineering students in Ireland.

With 3 million users in the US and 5 million users in Europe, a staggering 1% of the total population of the Western World are estimated to gain mobility and freedom through the daily use of wheelchairs. Unfortunately, this mobility can be severely restricted by every day barriers such as mounting single steps or kerbs.

John's project deals with the design, development and testing of Pyra-Aid™, a retro fitted, user friendly, momentum powered mechanical device to aid in mounting of single steps or kerbs. A systematic design approach, informed by wheelchair user and support group liaison, is adopted in the interactive development of the enablement device. Critical design criteria of the innovative 3 wheeled pyramid configuration include operation, efficiency, stability, safety, ease of attachment /detachment, versatility, wheelchair brand universality, manufacturability, aesthetics and cost.

A Mark 1 Pyra-Aid™ device has been manufactured and tested both in field and laboratory. Initial step / kerb mount tests have proven to be very promising. Design optimisation of the developing device, utilising state of the art manufacturing and material selection methodologies, is undertaken. Advanced analytical, computer aided design and experimental techniques, including finite element analysis and photo-elastic testing, are employed in the development of a Mark 2 prototype.

Pyra-Aid™ is a safe, easy to use, low cost aid promoting user comfort, mobility and independence through daily life for wheelchair users.

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For further Press Information: Please contact Jean Kearney on 087 2527495 or Ivor Melia on 087 2234193 email: jean.kearney@cit.ie