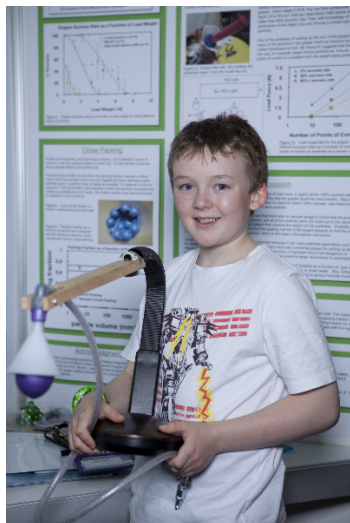


CWSF 2013 - Lethbridge, Alberta



Nicolaas Doyle

Jammed Up! Investigating a Universal Jamming Gripper

Challenge: Innovation

Category: Junior

Region: Niagara

City: Grimsby, ON

School: Grand Avenue E.S.

Abstract: Granular materials are made of many particles of the same substance, and have a jamming transition which turns them from fluid-like to solid-like when the particles pack so closely that they can no longer move. A universal gripper was built based on the jamming process which can successfully pick up objects of different geometry. Its performance was evaluated as a function of particle size.

Biography

My name is Nicolaas Doyle. I am a grade 7 student at Grand Avenue Public School in Grimsby, Ontario. I'm on a swim team and play water polo. I also play baseball or soccer in the summer. I play saxophone in a beginner jazz band. My favourite hobbies are racing RC cars and riding my scooter. I got the idea for my project from my mom who is a physicist. She went to Boston for a conference and attended a presentation on a Universal Jamming Gripper. My mom told me about it because she knows I am very interested in robotics, and so I decided to investigate it further as my science fair project. For future work I would like to give my gripper remote mobility. The advice I would give other students about doing a project is to do something that you know will really capture your interest so that you will be excited to work on it for most of the school year.

Awards

Value

Excellence Award - Junior - Bronze Medal Sponsor: Youth Science Canada	\$100
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 100