

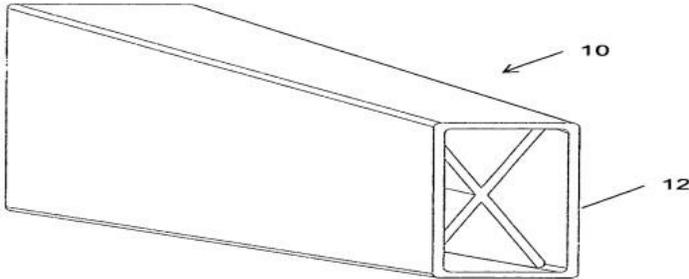
Internally Supported Composite Linked Structures

Background

Industrial applications increasingly involve highly automated high-speed and high payload operations involving robotic architectures that must fulfill complex spatial movements of their end effectors. This is often accompanied by the need for robotic structures that possess relatively long reach, high positional accuracy, and outstanding dynamic performance. To fulfill these demands, the structure of the robot must be designed to have both high specific stiffness and high damping ability. However, increasing the thickness and overall size of a robotic structure to achieve this is not a viable option, as this would increase the overall mass and inertia of the robot. These increases in mass/inertia unfavorably impact the size and costs of the product.

Technology Overview

The research led by Drs. Scott Nokleby and Remon Pop-Iliev have developed a novel design solution that overcomes the heavy weight of structures that are expected to handle heavy payloads with high speeds through complex spatial trajectories at a long reach while preserving high positional accuracy and dynamic performance. This is done by applying composite materials to the structures. This technology also has applications within the design of lightweight structural beams for a wide variety of aerospace, industrial, and civil applications that require high stiffness/strength-to-weight ratios.



Business Opportunity

Ontario Tech University looks to work with companies in a way that helps develop a relationship that is tailored to their interests. Thus, we are happy to explore collaborations, licenses, options, assignments, etc. It is the belief that only through enabling the company to utilize its business model will Ontario Tech University technology be able to make an impact within the marketplace.

Inventors:

Dr. Scott Nokleby and Dr. Remon Pop-Iliev

Publication:

Canadian Patent: [2,763,540](#)

About Ontario Tech University

Ontario Tech University conducts high-quality, rigorous research designed to meet the research and development needs of business and industry and benefit society. Whether the focus is on developing hydrogen-from-nuclear or fuel-cell technologies, improving network security, or understanding youth crime, we are committed to interdisciplinary research and development that addresses social, environmental, health, and economic challenges.