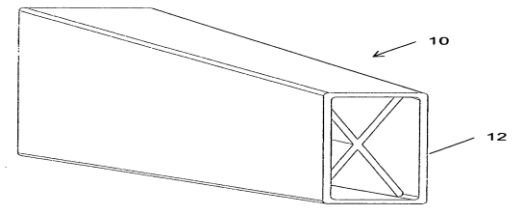


Internally Supported, Composite Link Structures



INVENTORS:

Dr. Scott Nokleby; Dr. Remon Pop-Iliev

OVERVIEW: A novel design which utilizes internal support structures made out of composite materials to increase the stiffness of the structure while minimizing the weight.

PATENT PROTECTION: CA 2,763,540

TARGET MARKETS: robotics, aerospace, automotive, construction, surgical/biomedical

BACKGROUND

Industrial applications increasingly involve highly automated high-speed and high payload operations involving robotic architectures that have to fulfill complex spatial movements of their end effectors. This is often accompanied with the need for robotic structures that possess relatively long reach, high positional accuracy, and outstanding dynamic performance. To fulfill these demands, the structures of the robot has to be designed so as 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 end product.

TECHNOLOGY OVERVIEW

The research led by Drs. Scott Nokleby and Remon Pop-Iliev has 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 through 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 a high stiffness/strength to weight ratios.

BUSINESS OPPORTUNITY

UOIT looks to work with companies in a way that helps develop a relationship that is tailored around 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 their business model will the UOIT technology be able to make impact within the marketplace.

ABOUT UOIT

UOIT 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.