The Open Access Journal of Science and Technology

Abstract

Parallel Mechanism based Rehabilitation Device for Neck Pain

Dr Arockia Selvakumar Arockia Doss
Vellore Institute of Technology, Chennai, TN, India

Abstract:
This research aims to design and develop a novel parallel mechanism based cervical collar device to help patients suffering from neck pain. Further this research is focussed on elderly people to create movements on the neck for various motions. The proposed and developed parallel mechanism consists of 3 RPS (Revolute – Prismatic – Spherical) joints. The dimensional analysis is carried out based on geometrical parameters of the parallel mechanism based on logical approach. Based on the kinematic equations the position and workspace analyses are carried out. The mechanism is simulated in MATLAB to validate the position and workspace analyses results. Further preliminary experimental studies are carried out based on various motions of neck. Based on the studies, it is found that the developed rehabilitation device can be used effectively to neck pain patients.

Biography:
Dr. Arockia Selvakumar Arockia Doss currently is a Senior Associate Professor of , Design and Automation Research Group, SMEC Vellore Institute of Technology, Chennai, TN, India. Dr. Arockia Selvakumar Arockia Doss current research interests include Parallel Mechanism based Rehabilitation Device for Neck Pain.

Publication of speakers:

- Dr Arockia Selvakumar Arockia Doss. Explosion of the light stimulated by wave supercompression and synthesis of elements. 9-th International Conference on Modern Problems of Nuclear Physics and Nuclear Technologies. 24-27 September (2019) at Institute of nuclear physics of Uzbekistan academy of science.
- Dr Arockia Selvakumar Arockia Doss. The Phenomenon of the Powerful Explosion of the Light. 7-th International Conference on Modern Trends in Physics Research. 20-24 April (2019) at Cairo University.
- Dr Arockia Selvakumar Arockia DossKhasanov, (2015). Spatial Super-Compression of the Continuous Media in High-Frequency Fields. American Journal of Modern Physics, 4(6), 281-286.

International Conference on Artificial Intelligence, Automation & Robotics; August 26-27, 2020; Dubai, UAE.

Citation: Dr Arockia Selvakumar Arockia Doss; Parallel Mechanism based Rehabilitation Device for Neck Pain; Webinar on Robotics, September 21, 2020 ; Dubai, UAE.