



DESIGN AND IMPLEMENTATION OF A 3 DEGREES OF FREEDOM ROBOTIC ARM POWERED BY PNEUMATIC ARTIFICIAL MUSCLE

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ABSTRACT

The development of a 3-DOF robotic arm powered by pneumatic artificial muscles is represented as an innovative approach in the field of robotics, with the advantages of lightweight and flexible design being combined with the power and control benefits of pneumatic actuation. The design process, challenges, and solutions that were encountered in the development of the robotic arm are outlined in this paper, with an emphasis on its potential applications in industrial and research settings being highlighted. Additionally, the robotic arm's modular design is enabled to allow easy customization and scalability, making it possible for the arm to be tailored to a wide range of tasks, from precise laboratory work to more robust industrial applications.

Keywords: Robot, Artificial muscle, Pneumatic