



## **FEM Analysis of 3D Printable Pleated Pneumatic Artificial muscle**

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The pneumatic soft actuator converts the input energy by utilizing structural deformation or material deformation by the applied pressure. In recent years, due to the development of the 3D printer, flexible materials such as rubber and hard materials can be printed at once, and it has become possible to develop pneumatic soft actuators with complex material structures which had been difficult to manufacture. In this paper, 3D printable pleated pneumatic artificial muscles are proposed, and the characteristics of the developed prototype are considered with FEM analysis and experiment..

**Keywords : artificial muscle, Pleated Pneumatic Artificial Muscle, Soft actuator, FEM**