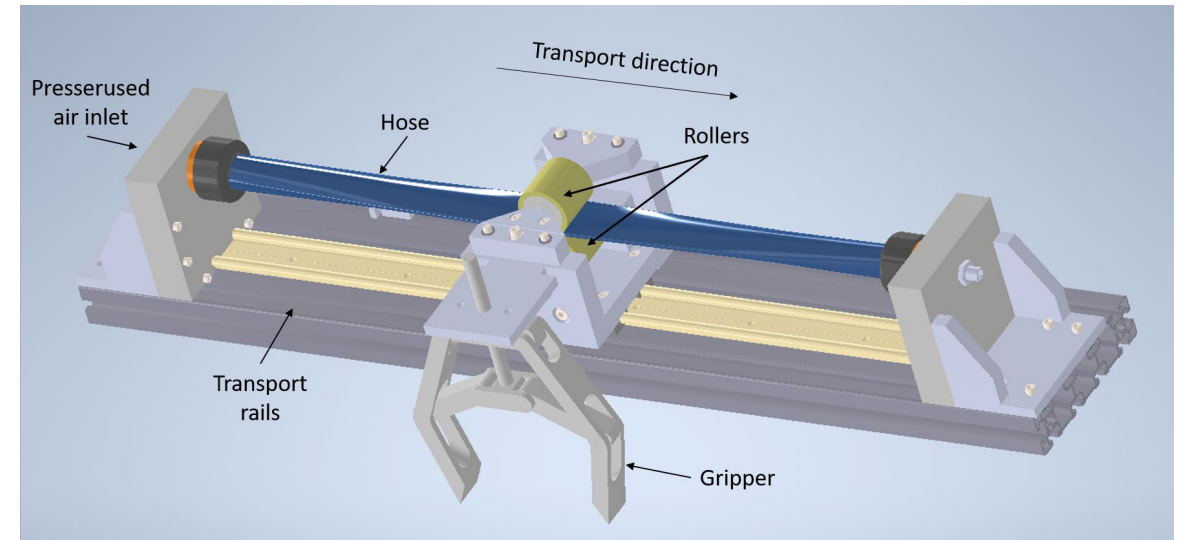


Research Work „Additive Manufacturing of lunar regolith mixture for Pneumatic Actuators“

- In this project, 3D Printing of flexible material (TPU) mixed with lunar regolith is used in order to manufacture different hose prototype geometries for pneumatic actuators.
- The considered pneumatic actuator is composed of a simple flexible tube compressed between two rollers which could be connected to a robotic arm for transport proposes. By connecting one side of the flexible tube to pressurized air and the other side to the atmosphere, a pressure difference is created that moves the rollers and hence the connected robotic arm. This actuator presents several advantages, namely its low cost, but has a limited lifetime due to the high mechanical stress on the hoses. This project aims to find out the influence of different tube materials and geometries on the flexible tube endurance so that the lifetime of the actuator will be increased.
- In this project, the pneumatic actuator test bed set-up will also needs to be designed and manufactured.



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