Sealable Microvalve that can be Repeatedly Opened and Sealed

INV-1243

Inventors: Carol Livermore-Clifford, Chenye Yang

Description

Currently, many types of micro-valves are used for sealing applications. Some of the common ones are MEMS micro-valves and permanently sealable valves. However, the existing valves are associated with potential limitations such as inadequate sealing over longer time periods, leakage issues, and irreversible/non-reusable sealing. **This approach discloses a novel, sealable microvalve that can be repeatedly opened and sealed, as required.**

Value Proposition

The micro-valve:

• Works on the basis of surface tension of a molten seal material

• Enables prevention of molecules or atoms entry from outside into a closed space

• Comprises a reversible, reusable, and a non-permanent seal, allowing for the opening and closing of a space

• Is substantially leak-free in the closed state and possesses a higher flow rate in the closed state as compared to conventional valves

• Would be commercially useful for variety of applications such as in microscale vacuum pumping systems, portable sensing systems for homeland security, military, healthcare/life sciences, and chip scale atomic clocks

Intellectual Property Status

PCT Application PCT/US13/25176

License Status

Available for license

Northeastern University
Center for Research Innovation