

Claims

What is claimed is:

1. A flow control assembly, comprising:
  - a tubing portion having a port configured to be part of a flow path in the flow control assembly; and
  - a porous material configured for preventing fluid flow through the flow path in a closed position and for allowing fluid to flow in the flow path by opening from the closed position in response to a stimulus in a wellbore.
2. The flow control assembly of claim 1, wherein the stimulus in the wellbore is a temperature level of an environment of the wellbore.
3. The flow control assembly of claim 2, wherein the porous material is shape memory foam.
4. The flow control assembly of claim 1, wherein the porous material is magnetic memory alloy.
5. The flow control assembly of claim 4, wherein the stimulus is a magnetic field from a device provided in the wellbore from a surface of the wellbore.

6. The flow control assembly of claim 5, wherein the porous material is configured to return to the closed position in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the device being provided in the wellbore from the surface.

7. The flow control assembly of claim 1, wherein the porous material comprises pores configured to increase in size to cause the porous material to open.

8. The flow control assembly of claim 1, wherein the porous material is located in the port.

9. The flow control assembly of claim 1, wherein the porous material is located external to the tubing portion and adjacent to a port opening of the port.

10. The flow control assembly of claim 1, wherein the porous material in the closed position is configured to provide a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion.

11. The flow control assembly of claim 1, further comprising:  
a housing external to the tubing portion and defining a second part of the flow path; and

an inflow control device positioned (i) in the second part of the flow path defined by the tubing portion and (ii) between the housing and an outer wall of the tubing portion.

12. The flow control assembly of claim 1, wherein the stimulus is a fluid introduced from a surface of the wellbore.

13. A flow control assembly configured to be disposed in a wellbore traversing a subterranean formation, the flow control assembly comprising:

a tubing portion having a port;

a porous material configured for providing a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion, the porous material comprising pores configured to increase in size for creating a flow path in the flow control assembly in response to a stimulus in the wellbore.

14. The flow control assembly of claim 13, wherein the port is configured to define part of the flow path.

15. The flow control assembly of claim 13, wherein the porous material is shape memory foam,

wherein the stimulus in the wellbore is a temperature level of an environment of the wellbore or fluid introduced into the wellbore from a surface of the wellbore.

16. The flow control assembly of claim 13, wherein the porous material is magnetic memory alloy,

wherein the stimulus is a magnetic field from a device provided in the wellbore from a surface of the wellbore.

17. The flow control assembly of claim 16, wherein the porous material is configured to close in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the device being provided in the wellbore from the surface.

18. A flow control assembly configured to be disposed in a wellbore traversing a subterranean formation, the flow control assembly comprising:

a tubing portion having a port configured to be part of a flow path in the flow control assembly; and

a porous material configured for providing a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion, and for opening from a closed position in response to a stimulus in the wellbore to allow fluid to flow in the flow path.

19. The flow control assembly of claim 18, wherein the porous material comprises pores configured to increase in size to cause the porous material to open.

20. The flow control assembly of claim 18, wherein the porous material is magnetic memory alloy,

wherein the stimulus is a magnetic field from a first device provided in the wellbore from a surface of the wellbore,

wherein the porous material is configured to close in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the first device being provided in the wellbore from the surface.

## CLAIMS

1. A flow control assembly, comprising:
  - a tubing portion having a port configured to be part of a flow path in the flow control assembly;
  - a porous material configured for preventing fluid flow through the flow path in a closed position and for allowing fluid to flow in the flow path by opening from the closed position in response to a stimulus in a wellbore;
  - a housing external to the tubing portion and defining a second part of the flow path; and
  - an inflow control device positioned (i) in the second-part of the flow path defined by the tubing portion and (ii) between the housing and an outer wall of the tubing portion.
2. The flow control assembly of claim 1, wherein the stimulus in the wellbore is a temperature level of an environment of the wellbore.
3. The flow control assembly of claim 2, wherein the porous material is shape memory foam.
4. The flow control assembly of claim 1, wherein the porous material is magnetic memory alloy.
5. The flow control assembly of claim 4, wherein the stimulus is a magnetic field from a device provided in the wellbore from a surface of the wellbore.
6. The flow control assembly of claim 5, wherein the porous material is configured to return to the closed position in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the device being provided in the wellbore from the surface.
7. The flow control assembly of claim 1, wherein the porous material comprises pores configured to increase in size to cause the porous material to open.

8. The flow control assembly of claim 1, wherein the porous material is located in the port.

9. The flow control assembly of claim 1, wherein the porous material is located external to the tubing portion and adjacent to a port opening of the port.

10. The flow control assembly of claim 1, wherein the porous material in the closed position is configured to provide a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion.

11. The flow control assembly of claim 1, wherein the stimulus is a fluid introduced from a surface of the wellbore.

12. A flow control assembly configured to be disposed in a wellbore traversing a subterranean formation, the flow control assembly comprising:

a tubing portion having a port;

a porous material configured for providing a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion, the porous material comprising pores configured to increase in size for creating a flow path in the flow control assembly in response to a stimulus in the wellbore

a housing external to the tubing portion and defining a part of the flow path; and

an inflow control device positioned (i) in the part of the flow path defined by the tubing portion and (ii) between the housing and an outer wall of the tubing portion.

13. The flow control assembly of claim 12, wherein the port is configured to define part of the flow path.

14. The flow control assembly of claim 12, wherein the porous material is shape memory foam, wherein the stimulus in the wellbore is a temperature level of an environment of the wellbore or fluid introduced into the wellbore from a surface of the wellbore.

15. The flow control assembly of claim 12, wherein the porous material is magnetic memory alloy, wherein the stimulus is a magnetic field from a device provided in the wellbore from a surface of the wellbore.

16. The flow control assembly of claim 15, wherein the porous material is configured to close in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the device being provided in the wellbore from the surface.

17. A flow control assembly configured to be disposed in a wellbore traversing a subterranean formation, the flow control assembly comprising:

a tubing portion having a port configured to be part of a flow path in the flow control assembly; and

a porous material that is magnetic memory alloy configured for providing a pressure seal between an inner area defined by the tubing portion and an outer area defined by the tubing portion, and for opening from a closed position in response to a stimulus that is a magnetic field from a first device provided in the wellbore from a surface of the wellbore to allow fluid to flow in the flow path;

a housing external to the tubing portion and defining a second part of the flow path; and

an inflow control device positioned (i) in the second part of the flow path defined by the tubing portion and (ii) between the housing and an outer wall of the tubing portion.

18. The flow control assembly of claim 17, wherein the porous material comprises pores configured to increase in size to cause the porous material to open.

19. The flow control assembly of claim 17, wherein the porous material is configured to close in response to a second magnetic field from a second device provided in the wellbore from the surface subsequent to the first device being provided in the wellbore from the surface.