CLAIMS

1. A microreactor system comprising:

a microreactor that has two inflow ports into which fluids are introduced and a flow path configured to merge the fluids, and that is configured to mix a first fluid introduced from one of the inflow ports and a second fluid introduced from the other of the inflow ports in the flow path;

a first container in which the first fluid is prepared;

a second container in which the second fluid is prepared;

a first pump configured to feed the first fluid toward the inflow port;

a second pump configured to feed the second fluid toward the inflow port;

a first measurement unit configured to measure an amount of the first fluid in the first container;

a second measurement unit configured to measure an amount of the second fluid in the second container; and

a switching unit configured to switch, based on information measured by the first measurement unit and the second measurement unit, at least one of the first fluid and the second fluid to be fed to the microreactor to at least one different fluid, wherein the at least one different fluid is different from the first fluid and the second fluid.

2. The microreactor system according to claim 1, wherein, after feeding of the first fluid by the first pump is started and the second fluid by the second pump is started, the switching unit is configured to:

switch the first fluid to the at least one different fluid when the first measurement unit measures that the first fluid in the first container is exhausted; and

switch the second fluid to the at least one different fluid when the second measurement unit measures that the second fluid in the second container is exhausted.

3. The microreactor system according to claim 1, wherein, after feeding of the first fluid by the first pump is started and the second fluid by the second pump is started, the switching unit is configured to switch the first fluid and the second fluid to the at least one different fluid when either:

the first measurement unit measures that the first fluid in the first container is exhausted; or

the second measurement unit measures that the second fluid in the second container is exhausted.

4. The microreactor system according to claim 1, wherein,

after feeding of the first fluid by the first pump is started and the second fluid by the second pump is started,

the switching unit is configured to:

when it is measured that the fluid in one of the first container and the second container is exhausted, switch the fluid to the at least one different fluid; and

after the fluid that is first exhausted is switched, when it is measured that the fluid in the other of the containers is exhausted, switch the fluid to the at least one different fluid.

5. The microreactor system according to claim 1,

(a) wherein the at least one different fluid includes a third fluid and a fourth fluid;

(b) wherein the system further comprises:

(i) a third container in which the third fluid is prepared; and

(ii) a fourth container in which the fourth fluid is prepared; and

(c) wherein the switching unit includes:

(i) a first switching unit configured to switch the first fluid to be fed to the microreactor to the third fluid; and

(ii) a second switching unit configured to switch the second fluid to be fed to the microreactor to the fourth fluid.

6. The microreactor system according to claim 1,

(a) wherein the at least one different fluid includes a third fluid;

(b) wherein the system further comprises a third container in which the third fluid is prepared; and

(c) wherein the switching unit includes:

(i) a first switching unit configured to switch the first fluid to be fed to the microreactor to the third fluid; and

(ii) a second switching unit configured to switch the second fluid to be fed to the microreactor to the third fluid.

7. The microreactor system according to any one of claims 1 to 6, further comprising, downstream of the microreactor, a component measurement unit configured to measure an amount of a component in a mixed fluid in the microreactor.

8. The microreactor system according to any one of claims 1 to 6, further comprising, connected downstream from the microreactor:

a collection container configured to collect a mixed fluid; and

a disposal container in which a fluid is disposed.

9. The microreactor system according to any one of claims 1 to 6, further comprising one or more of the containers

supported by a rack in which a lower side of the one or more containers is configured to open and discharge the fluid in a vertically downward direction.

10. The microreactor system according to claim 1, wherein the at least one different fluid does not react with components contained in the first fluid and the second fluid.

11. The microreactor system according to claim 1, wherein:

the at least one different fluid is not compatible with the first fluid and the second fluid; and

the at least one different fluid is separated from the first fluid and the second fluid in a two-phase state.

12. A microreactor system comprising:

a microreactor in a first stage that has two inflow ports into which fluids are introduced and a flow path configured to merge the fluids, and that is configured to mix a first-stage first fluid introduced from one of the inflow ports and a first-stage second fluid introduced from the other of the inflow ports in the flow path;

a plurality of microreactors in a second and subsequent stages disposed in series downstream of the microreactor in the first stage, each of the microreactors having two inflow ports into which fluids are introduced and a flow path configured to merge the fluids, and being configured to mix,

in the flow path, a mixed fluid produced in the microreactor in the first stage and introduced from one of the inflow ports and fluids to be mixed introduced from the other of the inflow ports;

a first-stage first fluid container in which the first-stage first fluid is prepared;

a first-stage second fluid container in which the first-stage second fluid is prepared;

a plurality of containers for the fluids to be mixed that are provided for each of the microreactors in the second and subsequent stages and in which the fluids to be mixed are prepared;

a first-stage first fluid pump configured to feed the first-stage first fluid toward one of the inflow ports of the microreactor in the first stage;

a first-stage second fluid pump configured to feed the first-stage second fluid toward the other of the inflow ports of the microreactor in the first stage;

a plurality of pumps for the fluids to be mixed that are provided for each of the microreactors in the second and subsequent stages, and that are configured to feed the fluids to be mixed toward the other of the inflow ports of the microreactors in a second and subsequent stages;

a first measurement unit for the first-stage first fluid that is configured to measure an amount of the first-stage first fluid in the first-stage first fluid container;

a second measurement unit for the first-stage second fluid that is configured to measure an amount of the first-stage second fluid in the first-stage second fluid container;

a plurality of measurement units for the fluids to be mixed that are provided for each of the microreactors in the second and subsequent stages and that are configured to measure amounts of the fluids to be mixed in the containers for the fluids to be mixed;

a switching unit for the first-stage first fluid that is configured, based on information measured by the first measurement unit, to switch the first-stage first fluid to be fed to the microreactor in the first stage to at least one different fluid, wherein the at least one different fluid is different from the first-stage first fluid, the first-stage second fluid, and the fluids to be mixed;

a switching unit for the first-stage second fluid that is configured, based on information measured by the second measurement unit, to switch the first-stage second fluid to be fed to the microreactor in the first stage to the at least one different fluid; and

a plurality of switching units for the fluids to be mixed that are provided for each of the microreactors in the second and subsequent stages and that are configured to switch the fluids to be mixed to be fed to the microreactors in the second and subsequent stages to the at least one

different fluid.

13. The microreactor system according to claim 12, wherein the at least one different fluid does not react with components contained in the first fluid and the second fluid.

14. The microreactor system according to claim 12, wherein:

the at least one different fluid is not compatible with the first fluid and the second fluid; and

the at least one different fluid is separated from the first fluid and the second fluid in a two-phase state.