CLAIMS

1. A reactor comprising:

a reaction-side flow passage through which a reaction fluid as a reaction object flows, the reaction-side flow passage being provided with a hollow space having a constant width;

a heat-medium side flow passage provided in parallel with the reaction-side flow passage through a heat-transfer partition, provided with a hollow space formed therein through which a heat medium flows, the space of the heat-medium side flow passage having a constant width and extending in a direction parallel to a flow direction of the reaction fluid in the reaction-side flow passage; and

a catalyst configured to promote a reaction of the reaction fluid, the catalyst separately formed from the reaction-side flow passage and provided in the reaction-side flow passage so that a cross section of the reaction-side flow passage defined by the catalyst is smaller on a downstream side than on an upstream side in the reaction-side flow passage; wherein

the catalyst has a plate shape;

the catalyst is divided into a plurality of parts that arranged away from each other in a flowing direction of the reaction fluid in the reaction-side flow passage, and wherein

the catalyst is corrugated.

2. The reactor according to claim 1, wherein

a gas flows as the heat medium in the heat-medium side flow passage.

3. The reactor according to claim 1, wherein

the reaction-side flow passage and the heat-medium side flow passage are alternately stacked.

4. The reactor according to claim 2, wherein

the reaction-side flow passage and the heat-medium side flow passage are alternately stacked.