

ABSTRACT

The present application discloses a regeneration device, a device for preparing low-carbon olefins, and a use thereof. The regeneration device includes a first regenerator and a second regenerator; a first activation zone of the first regenerator is connected to the second regenerator through a pipeline, such that a catalyst in the first activation zone is able to be delivered to the second regenerator; and the second regenerator is connected to a gas-solid separation zone of the first regenerator through a pipeline, such that a catalyst in the second regenerator is able to be delivered to the gas-solid separation zone. The regeneration device can adjust the coke content, coke content distribution, and coke species in a dimethyl ether/methanol to olefins (DMTO) catalyst to control an operation window of the DMTO catalyst, which improves the selectivity for low-carbon olefins and the atomic economy of a methanol-to-olefins (MTO) technology.

Fig 1 for publication.