

## ABSTRACT OF THE DISCLOSURE

### OLEFIN POLYMERIZATION REACTION UNIT AND POLYOLEFIN PRODUCTION PROCESS

An olefin polymerization reaction unit includes a multistage gas phase polymerization reactor which is divided into two or more polymerization stages, in which polyolefin particles move from an initial stage to a final stage, and in which an olefin monomer-containing gas is fed from the final stage toward the initial stage. The reaction unit also includes first circulating means for feeding to the final stage a gas that is discharged from the initial stage and then cooled with a first heat exchanger, and second circulating means for feeding to one of the polymerization stages a condensate formed by condensing, with a second heat exchanger different from the first heat exchanger, a gas removed from one of the polymerization stages.

Figure 1