

## **The New Archimedean Screw Reactor: Continuous processing with almost no residence time distribution**

The new Archimedean Screw-Crystallizer / Reactor (ASKR) offers exact residence time without back mixing but gentle and yet fully turbulent mixing!

The principle is very simple: a horizontally rotating cylinder with a connected spiral moves fluid volumes from the entrance of the apparatus on one side to the exit on the other side. Each of the spiral segments is equal to a small conventional stirred reactor, but without stirrer.

The apparatus is filled continuously through an opening on one side. More reactants or seed crystals may be added continuously.

The rotation of the entire cylinder rotates the spiral and moves the volume portions of the individual segments to the other side.

At the end, the product leaves the cylinder through openings in the jacket or on the side. Washing nozzles, dosages and probes can easily be installed.

The operating range is in a volume stream from 0.5l/h to 200 m<sup>3</sup>/h and a residence time from 100 seconds to 20 hours.