

The inventions relate to the equipment for obtaining liquid fuel from vegetal oils and low- molecular alcohols, as well as to devices used for conduction of mixing, etherification and refining processes, and may be applied in the chemical, food and processing industry.

In the installation for obtaining biodiesel fuel from vegetal oils, consisting of an etherification reactor (1), a washing reactor, a mixing reactor (13), mixers, heat exchangers, separators (3), a drier and a cooler, according to the invention is used a spiral-type mixing reactor (13), placed onto the external surface of the etherification reactor's body. At the same time, into the body of the etherification reactor there is placed a multichamber mixing column (8) and a mixing section (12), the washing reactor is made in the form of a cylindrical body, in the centre of which there is installed a buffer-mixing column, and the working space is divided by the heat exchanger into washing and stripping capacities, coupled with an injector, through which into the etherification reactor there are fed the washing and normalized mixtures.

The multichamber mixing column (8), used in the installation for obtaining biodiesel fuel, consists of a cylindrical body, with contact devices placed thereon, fixed perpendicular about the shaft axis. According to the invention, as contact devices, onto the vertical shaft there are fixed disks with slots for advancement of the mixed liquids, and onto the inner surface of the body are additionally fixed immobile disks with slots, at the same time the immobile and rotatable disks divide the space of the mixing column into n mixing chambers.

The spiral-type mixing reactor (13), used in the installation consists of a pipe, representing its body, inside which by means of fixing bars there are fixed disks with slots, forming mixing chambers. According to the invention, the fixing bars are convoluted into a three-dimensional cylindrical spiral, the parameters of which – the step and the turning angle of the bar, are calculated for each installation taking into account the required capacity, which provides the possibility of making the mixing reactor in the form of three-dimensional spiral.

Claims: 3

Fig.: 5

