

ABSTRACT

MEMBRANE SEPARATION METHOD AND APPARATUS EQUIPPED WITH PARTICLE FRACTIONATOR

5

Disclosed is an apparatus for water treatment, including a membrane separator for solids-liquid separation; and a particle fractionator which has at least two exits of a fractionated solid-liquid mixture produced therein, wherein a liquor containing particles of different sizes including submicron particles is fed to the particle fractionator before a membrane separation by the membrane separator, and wherein a first fraction of the fractionated solid-liquid mixture is returned to the membrane separator from one exit of the at least two exits of the particle fractionator, the first fraction being less than the liquor in terms of content of the submicron particles. This apparatus enables a rapid achievement of suppression of membrane fouling.

10

15

Fig. 1