عنوان مقاله:

A novel combination method to design gas-liquid separators

محل انتشار:

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خلاصه مقاله:

Separators are an important part of almost every oil and gas production facility. Because of their vitality, optimal separator design is critical. Semi-empirical design method is a usual and more primitive way of determining the optimal dimensions for separators. However, because of the simplifying assumptions used to derive their equations, this method can only be used to obtain a rough estimate for its dimensions. In this paper, a novel combination method to design multiphase separators is presented using experimentation. This combination method includes: Conducting experiments on a pilot two-phase separation unit and determining the optimum slenderness ratio. The pilot of two-phase separation unit consists of a laboratory-scale two-phase separator, pumps, compressors and a static mixer to create a two-phase flow, and a liquid filter to trap liquid droplets from the separator gas outflow. The extracted liquid droplet diameters and their weight are then calculated by imaging and weighing processes. Using these procedures, the dimensions of a surface separator for one of the production wells located in South Pars gas field are determined. One of the most important achievements of this research is to provide the important basis for the optimal design of .surface separators

کلمات کلیدی:

novel, combination, method, design, separator