ABSTRAK

Ejector merupakan alat untuk memindah fluida tanpa komponen yang bergerak. *Ejector* merupakan alat yang ramah lingkungan karena dalam pengoperasiannya tidak membutuhkan energi listrik. *Ejector* banyak digunakkan pada sistem refrigasi, pemvakuman, pencampuran, dan kimia. Struktur yang sederhana dan perawatan yang mudah menyebabkan *ejector* banyak digunakan di industri. Salah satu faktor yang mempengaruhi kinerja *ejector* adalah faktor geometri. *Nozzle exit position* (NXP) merupakan jarak *outlet nozzle* dengan *inlet mixing chamber*. Dalam Penelitian ini, akan dilakukan pengujian mengenai pengaruh NXP pada kinerja ejector berdasarkan parameter *entrainment ratio* dan *coefficient of performance*.

Penelitian ini dilakukan dengan metode eksperimental untuk mengetahui pengaruh variasi NXP terhadap kinerja ejector. Pada penelitian ini digunakkan variasi NXP -3, NXP 0, dan NXP +3. Pada penelitian ini juga digunakkan variasi *primary pressure* dan *secondary pressure* untuk mengetahui pengaruhnya terhadap kinerja ejector. *Primary pressure* yang digunakan 105 Psi, 110 Psi, 115 Psi, dan 120 Psi. *Secondary pressure* yang digunakkan 80 Psi, 85 Psi, 90 Psi, 95 Psi, dan 100 Psi.

Hasil dari penelitian menunjukkan bahwa NXP mempengaruhi kinerja *ejector*. Nilai optimal NXP pada *ejector* selalu dipengaruhi oleh kondisi pengoperasian *primary pressure* dan *secondary pressure*. Pada penelitian ini, NXP 0 memiliki kinerja paling optimal. Nilai *entrainment ratio* paling tinggi sebesar 1,765 pada *primary pressure* 105 Psi dan secondary pressure 110 Psi. Sedangkan nilai tertinggi *coefficient of performance* sebesar 0,086 pada *primary pressure* 105 Psi dan *secondary pressure* 100 Psi.

Kata kunci: *ejector*, *entrainment ratio, coefficient of performance,* NXP

ABSTRACT

Ejector is a device for moving fluid without moving parts. The ejector is an environmentally friendly tool because it does not require electricity to operate. Ejectors are widely used in refrigeration, vacum, mixing and chemical systems. The simple structure and easy maintenance make the ejector widely used in industry. One of the factors that affect ejector performance is the geometry factor. Nozzle exit position (NXP) is the distance between the nozzle outlet and the mixing chamber inlet. In this study, tests will be carried out regarding the effect of NXP on ejector performance based on the parameters of the entrainment ratio and the coefficient of performance.

This research was conducted using an experimental method to determine the effect of NXP variations on ejector performance. In this study, variations of NXP -3, NXP 0, and NXP +3 were used. In this study, variations of primary pressure and secondary pressure were also used to determine their effect on ejector performance. The primary pressure used is 105 Psi, 110 Psi, 115 Psi and 120 Psi. The secondary pressure used is 80 Psi, 85 Psi, 90 Psi, 95 Psi and 100 Psi.

The results of the study show that NXP affects ejector performance. The optimal value of NXP on the ejector is always influenced by the operating conditions of the primary pressure and secondary pressure. In this study, NXP 0 has the most optimal performance. The highest entrainment ratio value is 1.765 at 105 Psi primary pressure and 110 Psi secondary pressure. While the highest value of the coefficient of performance is 0.086 at the primary pressure of 105 Psi and secondary pressure of 100 Psi.

Keywords: ejector, entrainment ratio, coefficient of performance, NXP