Performance prediction of steam ejector using computational fluid dynamics: Part 1. Validation of the CFD results

Author(s): Sriveerakul T (Sriveerakul, T.), Aphornratana S (Aphornratana, S.), Chunnanond K (Chunnanond, K.)

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Abstract: The aim of this study is to investigate the use of CFD in predicting performance of a steam ejector used in refrigeration applications. This study is reported in a series of two papers. In this part, the CFD results were validated with the experimental values. The effects of operating conditions and geometries on its performance were investigated. The CFD's results were found to agree well with actual values obtained from the experimental steam jet refrigerator. The CFD was found to be not only a sufficient tool in predicting ejector performance it also provide a better understanding in the flow and mixing processes within the ejector. Phenomena on choke flow, mixing behavior, jet core effect and the presence of oblique shock will later be discussed in Part 2. (c) 2006 Elsevier Masson SAS. All rights reserved.

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Reprint Address: Aphornratana, S (reprint author), Thammasat Univ, Sirindhorn Int Inst & Technol, PO Box 22, Pathum Thani 12121, Thailand

Addresses:
1. Thammasat Univ, Sirindhorn Int Inst & Technol, Pathum Thani 12121, Thailand

E-mail Addresses: satha@siit.tu.ac.th

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