中国化学工程学报 2007 15 (6): 837-841 ISSN: 1004-616x CN: 44-1063/R

TRANSPORT PHENOMENA & FLUID MECHANICS

# 非金属平垫片密封连接的泄漏率预测

顾伯勤, 陈晔, 朱大胜

College of Mechanical and Power Engineering, Nanjing University of Technology, Nanjing 210009, China

收稿日期 2007-2-22 修回日期 网络版发布日期 接受日期 2007-9-18

摘要 In this work, a model of gas leakage through nonmetallic gaskets was developed in order to predict leakage rate of gasket sealing connections. The model was verified by the leakage experiments on two types of gaskets: compressed non-asbestos fiber gasket and flexible graphite gasket reinforced with tanged metal sheet. The coefficients in the leakage rate formula were obtained by regression of experimental data for each type of gasket. The model was also validated against the experimental leakage data by other researchers and shown to produce ac-curate predications. Furthermore, the model was applied to a bolted flanged connection in service in order to assess the tightness of the connection.

关键词 gasket leakage model leakage rate tightness

分类号

**DOI:**

## Prediction of leakage rates through sealing connections with nonmetallic gaskets

GU Boqin, CHEN Ye, ZHU Dasheng

College of Mechanical and Power Engineering, Nanjing University of Technology, Nanjing 210009, China

Received 2007-2-22 Revised Online Accepted 2007-9-18

**Abstract** In this work, a model of gas leakage through nonmetallic gaskets was developed in order to predict leakage rate of gasket sealing connections. The model was verified by the leakage experiments on two types of gaskets: compressed non-asbestos fiber gasket and flexible graphite gasket reinforced with tanged metal sheet. The coefficients in the leakage rate formula were obtained by regression of experimental data for each type of gasket. The model was also validated against the experimental leakage data by other researchers and shown to produce ac-curate predications. Furthermore, the model was applied to a bolted flanged connection in service in order to assess the tightness of the connection.

**Key words** gasket; leakage model; leakage rate; tightness

通讯作者:
顾伯勤 bqgu@njut.edu.cn
作者个人主页: 顾伯勤; 陈晔; 朱大胜