

Simulation of gas leakage in a gas utilization system in household sector

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Abstrak

The Indonesian Government is setting up a program of city gas utilization for household sector. People are not convinced of the safety of city gas utilization. One of the accidents people worry about is gas leaks in utilization systems, such as kitchen. Leaking gas is not dangerous when ones can prevent fire ignition. Therefore, information on potential fires caused by leaking gas and methods to prevent their occurrence is needed. This research was intended to obtain the information on fire prevention caused by leaking gas in a kitchen through simulation. The system simulated in the research is a rectangular room of $3\text{ m} \times 2\text{ m} \times 3\text{ m}$. The models consider mass and momentum transfers. The simulation results show that when leaking gas is detected, the leak source must be closed. With the leak source being open, the safe limit is not reached, even if an exhaust fan is provided.