

## CEST02\_038

### Simulation of gas leak from pressurized pipelines using OLGA

Wiam Kharouba1\*, Omar Sultan2, Hassan Eshreaf2

1Department of Chemical Engineering, Faculty of Engineering, The Libyan Academy Tripoli, Libya

2Department of Chemical Engineering, Faculty of Engineering, Zawia University, Libya

wiam-0022@yahoo.com

#### ABSTRACT

In recently, the modeling of CO<sub>2</sub> leakage from pipelines at CCS process has been problematic because of the lack of appropriate source term models that handle the complex behavior of CO<sub>2</sub> correctly during release. There are currently many commercially available pipeline simulation tools that may be applicable to calculate the outflow from ruptured pipelines for CO<sub>2</sub> pipelines. The main purpose of this study is to utilize OLGA 7 simulator for predicting outflow rates and duration of a ruptured supercritical CO<sub>2</sub> pipeline at different leakage sizes. OLGA was selected because of its potential in leakage scenarios simulation in gas pipeline. The results show that the OLGA simulator offers a quick and appropriate decision to predict the flow rate of CO<sub>2</sub> leakage as well as to determine the type of gas dispersion inside the platform, providing accurate input to the gas dispersion model and assessing dispersion risk on the workers inside the platform.

**Keywords.** OLGA simulator, Risk Assessment, CCS technology.