

3<sup>rd</sup> World Congress on

# Petrochemistry and Chemical Engineering

November 30-December 02, 2015 Atlanta, USA

## CO<sub>2</sub>-Prophet model based evaluation of CO<sub>2</sub>-EOR and storage potential in mature oil reservoirs

**Dayanand Saini**

California State University, USA

The selection of candidate reservoirs for future CO<sub>2</sub> enhanced oil recovery (EOR) and storage projects greatly relies on methodical screening and detailed site specific evaluations. Once suitable reservoirs are identified in an initial screening for further evaluation, CO<sub>2</sub>-Prophet screening model can be used for a better understanding of proposed EOR project performance and site specific incidental CO<sub>2</sub> storage potential prior to launching detailed and time consuming reservoir simulation studies. Often, calibration of CO<sub>2</sub>-prophet model is either overlooked or performed for achieving a material balance for oil and water phases. A reservoir specific calibration of CO<sub>2</sub>-Prophet model for obtaining material balance for oil and water phases is aimed to increase confidence in future performance prediction results. The present paper describes the calibration procedure of the CO<sub>2</sub>-Prophet model in detail and uses the appropriately calibrated model for predicting CO<sub>2</sub>-EOR performance and incidental CO<sub>2</sub> storage potential in the selected reservoirs. The present study uses CO<sub>2</sub>-Prophet model for expanding the initial screening process further i.e., site specific evaluation of CO<sub>2</sub>-EOR and storage potential using an approach that lies between initial screening estimates and detailed reservoir simulation based studies. Beyond EOR based volumetric predictions or other simple estimations made in initial screening of candidate reservoirs, appropriately calibrated CO<sub>2</sub>-Prophet model can provide more robust and reservoir specific estimate of CO<sub>2</sub>-EOR and incidental CO<sub>2</sub> storage potential for candidate reservoirs. Such results can be used for making initial business decisions like selection of prospective pilot sites or field acquisition while avoiding the need of detailed reservoir simulation studies.

### Biography

Dayanand Saini has completed PhD and working as an assistant professor of engineering in department of physics & engineering from California state university, USA

[dsaini@csu.edu](mailto:dsaini@csu.edu)

Notes: