**EXAMINATION OF DIFFERENT AMINO ACIDS AS METHANE-PROPANE GAS HYDRATE KINETIC INHIBITORS IN UPSTREAM INDUSTRY**

**S. N. Longinos1,\*, D. D. Longinou2**

1Petroleum Engineering Department, Nazarbayev University, Nur-Sultan, Kazakhstan

2Economics and Sustainable Development Department, Harokopio University, Athens, Greece

*\* s.n.longinos@gmail.com*

**ABSTRACT**

Gas hydrates are acquainted as a significant issue to the oil and gas flow assurance, as it generates pipelines blockages. The geneartion of gas hydrates can create many functional problems such as: stop of production, high preservation expenditures, environmental dangers and even loss of human beings. Until now, the most efficient way to prevent gas hydrate blockage in pipelines, is the injection of chemical inhibitors. Thermodynamic gas hydrate inhibitors (THIs) and low dosage gas hydrate inhibitors (LDIs) are the two main kinds of gas hydrate inhibitors. The implementations of (THIs) require high concentrations up to 50 wt% of the chemicals hence to augment their volatility. For that reason the use of (THIs) is both ecologically interdictory and costly. On the other hand, (LDIs) are mainly polymers and are used either to disperse gas hydrates or delay nucleation of gas hydrates. Amino acids can play such role because are environmental friendly, biodegradable and can be used in small quantities compared to thermodynamic and other low dosage inhibitors that are used until now in oil and gas industry. In this study four alterative amino acids such as: arginine, aspartic acid, threonine and valine examined if they function as kinetic inhibitors on methane-propane gas hydrate formation. There were measurements in induction time, rate of hydrate formation, duration of formation of gas hydrates and hydrate productivity.The results showed that aspatric acid and threonine (aspartic acid>threonine) behaved as inhibitors following the rank from most powerful to less one while arginine and valine behaved as promoters (arginine>valine) for both hydrate formation and induction time.

**KEYWORDS:** Amino acids, Gas hydrates, Kinetic inhibitors

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