

## عنوان مقاله:

Comprehensive Review on Gas Migration and Preventative Strategies through Well Cementing

## محل انتشار:

فصلنامه شیمی نوین، دوره 8، شماره 1 (سال: 1400)

تعداد صفحات اصل مقاله: 14

## نویسندگان:

Mahmoud Bayanak - *Department of Chemical Engineering, Mahshahr Branch, Islamic Azad University, Mahshahr, Iran*

Soroush Zarinabadi - *Department of Chemical Engineering, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran*

Khalil Shahbazi - *Petroleum Engineering Department, Ahvaz Faculty of Petroleum Engineering, Petroleum University of Technology (PUT), Ahvaz, Iran*

Alireza Azimi - *Department of Chemical Engineering, Mahshahr Branch, Islamic Azad University, Mahshahr, Iran*

## خلاصه مقاله:

There are various vital reasons for cementing operation, in which fluid migration through cement slurry, as one of the most dangerous and complicated challenges faces drilling industry has been occurred. This phenomenon has become a global problem with its disastrous effects this review paper focused on the gas migration types, factors affecting on each of them and some theoretical and experimental solution. Immediate, short term and long term are the three types of gas migration based on the lifecycle of the well. There are different strategies to prevent gas migration, each type of migration have special strategies. Technical solution development, application of different cement additives in cement slurry and prediction technique for cement quality are number of strategies are developed. Hydrostatic pressure less than pore pressure and the existence of a path to gas migration are two major factors that must be stopped simultaneously to prevent migration. Understanding the mechanisms of cement hydration in early times is necessary to investigate these factors. Cement hydration can lead to swelling and shrinkage at the same time. At the beginning of cementation chemical shrinkage occurs, followed by swelling and autogenously shrinkage, and their intensity depends on the type and amount of the cement additives, the degree of hydration, the water-cement ratio and the fineness of cement. The most important factors that make the annulus pressure less than the pore pressure are: cement placement, Cement hydration in liquid state, and Cement hydration in solid-liquid state.

## کلمات کلیدی:

Well Cementing, fluid migration, rheology, preventing strategies, nano-silica

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1141996>



