

## عنوان مقاله:

Recycling of hydrocarbon resources through utilization of carbon dioxide as a reactant

## محل انتشار:

یازدهمین کنگره ملی مهندسی شیمی ایران (سال: 1385)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

The build-up of carbon dioxide, a greenhouse gas, in the atmosphere as a consequence of human activities has resulted in significant concern worldwide. On the other hand, carbon dioxide can be considered as a potential C1 source in chemical synthesis. Carbon dioxide can be used as an alternative reactant or a reactive diluent in certain well known petrochemical processes. It can be used in the synthesis of methanol, and as an oxidant in oxidative coupling of methane, oxidative dehydrogenation of paraffins and reforming of methane to produce synthesis gas. In this way, the carbon of carbon dioxide can be effectively recycled to the production line. At the same time, the emission of this gas to the atmosphere is reduced. The utilization of carbon dioxide as a feedstock, however, is not an easy task due to the high stability of its molecules rendering the related processes thermodynamically less favorable.

## کلمات کلیدی:

carbon dioxide conversion, C1 chemistry, low-grade gas fields, environmental catalysis

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