

## Accepted Manuscript

Title: Methanation of CO<sub>2</sub> over alkali-promoted Ru/TiO<sub>2</sub> catalysts: II. Effect of alkali additives on the reaction pathway

Author: Paraskevi Panagiotopoulou

PII: S0926-3373(18)30452-1  
DOI: <https://doi.org/10.1016/j.apcatb.2018.05.028>  
Reference: APCATB 16682

To appear in: *Applied Catalysis B: Environmental*

Received date: 2-3-2018  
Revised date: 4-5-2018  
Accepted date: 8-5-2018



Please cite this article as: Panagiotopoulou P, Methanation of CO<sub>2</sub> over alkali-promoted Ru/TiO<sub>2</sub> catalysts: II. Effect of alkali additives on the reaction pathway, *Applied Catalysis B: Environmental* (2018), <https://doi.org/10.1016/j.apcatb.2018.05.028>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Methanation of CO<sub>2</sub> over alkali-promoted Ru/TiO<sub>2</sub> catalysts: II. Effect of alkali additives on the reaction pathway

Paraskevi Panagiotopoulou\*

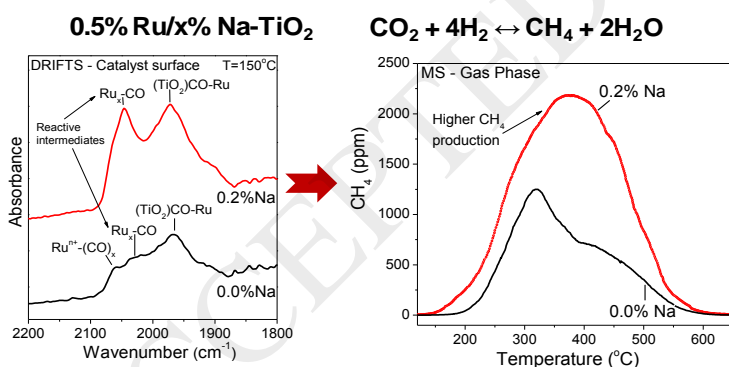
School of Environmental Engineering, Technical University of Crete, GR-73100 Chania,

Greece

Tel. No: +30 28210 37770, e-mail: ppanagiotopoulou@isc.tuc.gr

\* To whom correspondence should be addressed.

## Graphical abstract



## Highlights:

- Activity and CH<sub>4</sub> selectivity increase with promotion of 0.5% Ru/TiO<sub>2</sub> with alkalis
- Ru carbonyls formed under CO<sub>2</sub>/H<sub>2</sub> flow varies upon alkali addition on 0.5% Ru/TiO<sub>2</sub>
- Alkali promotion of 0.5% Ru/TiO<sub>2</sub> catalyst favors the dissociative adsorption of CO
- The relative population of reactive Ru<sub>x</sub>-CO increases in the presence of alkalis
- TOF and nature/population of Ru carbonyls are not varied by Na addition on 5% Ru/TiO<sub>2</sub>

Download English Version:

<https://daneshyari.com/en/article/6498162>

Download Persian Version:

<https://daneshyari.com/article/6498162>

[Daneshyari.com](https://daneshyari.com)