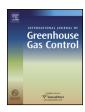


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## International Journal of Greenhouse Gas Control

journal homepage: www.elsevier.com/locate/ijggc



# CO<sub>2</sub> capture with potassium carbonate solutions: A state-of-the-art review



Tohid Nejad Ghaffar Borhani<sup>a</sup>, Abbas Azarpour<sup>b</sup>, Vahid Akbari<sup>a,c</sup>, Sharifah Rafidah Wan Alwi<sup>a</sup>, Zainuddin Abdul Manan<sup>a,\*</sup>

- <sup>a</sup> Process Systems Engineering Center (PROSPECT), Research Institute for Sustainable Environment, Faculty of Chemical Engineering, Universiti Teknologi Malaysia, UTM, 81310 Johor Bahru, Malaysia
- <sup>b</sup> Chemical Engineering Department, Universiti Teknologi Petronas, Bandar Seri Iskandar, 31750 Tronoh, Perak, Malaysia
- <sup>c</sup> Department of Process Engineering, Razi Petrochemical Company, Tehran, Iran

#### ARTICLE INFO

#### Article history: Received 20 March 2015 Received in revised form 29 May 2015 Accepted 24 June 2015 Available online 31 July 2015

Keywords: CO<sub>2</sub> capture Chemical absorption Experimental studies Modeling and simulation studies Potassium carbonate solution Pilot plant Review

#### ABSTRACT

The potassium carbonate (PC) solution is an important chemical solvent to reduce CO<sub>2</sub> emissions due to its advantages of low cost, little toxicity, ease of regeneration, slow corrosiveness, low degradation, and its high stability as well as CO<sub>2</sub> absorption capacity. As a result, the PC process has been applied in more than 700 plants worldwide for CO<sub>2</sub> and hydrogen sulphide removal from streams like ammonia synthesis gas, crude hydrogen, natural gas, and town gas. This paper provides a state-of-the-art review on the research works on CO<sub>2</sub> capture using the PC solution. The studies related to the PC solution comprise three main areas: process, thermodynamics, and kinetics. Important experimental studies as well as modeling and simulation studies are reviewed. Future research directions on CO<sub>2</sub> absorption by aqueous PC solution are highlighted and discussed.

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### **Contents**

1.	Introduction	143
	1.1. Background	143
	1.2. Paper outline	144
2.	CO <sub>2</sub> capture using PC solution.	144
	2.1. Process description	144
	2.2. Process chemistry	
	2.2.1. Chemical reactions (speciation reactions)	145
	2.2.2. Physical reactions (equilibrium reactions)	146
3.	Experimental and modeling studies of PC solution kinetics	146
	3.1. Kinetic experiments	146
	3.2. Kinetic modeling	
	3.2.1. Kinetic modeling of un-promoted PC solution	148
	3.2.2. Kinetic modeling of promoted PC solution	148
	3.2.3. Developed kinetic models	148
4.	Experimental and modeling studies of PC solution thermodynamics	149
	4.1. Thermodynamic experiments	149
	4.2. Thermodynamic modeling	
	4.2.1 Chemical potential for ideal and real solutions	151

<sup>\*</sup> Corresponding author. Tel.: +60 75535502/75535609. E-mail address: zain@cheme.utm.my (Z.A. Manan).