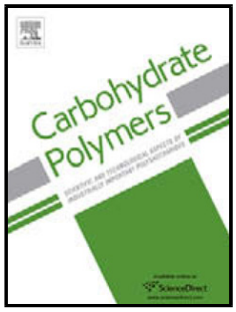

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Authors: Fanrong Meng, Yijun Zhou, JunYu Liu, Jun Wu, Guoqing Wang, Ruisong Li, Yucang Zhang

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Thermal decomposition behaviors and kinetics of carrageenan-poly vinyl alcohol bio-composite film

Fanrong Meng [a,b], Yijun Zhou [a], JunYu Liu [a], Jun Wu [a,b], Guoqing Wang [a,b], Ruisong Li [a,b], Yucang Zhang [a,b,*]

[a] *Key Laboratory of Advanced Materials of Tropical Island Resources of Ministry of Education,*

Hainan University, Hai Kou 570228, Hainan, China

[b] *State Key Laboratory of Marine Resource Utilization in South China Sea, College of Materials & Chemical Engineering, Hainan University, Haikou 570228, China*

Abstract

Pyrolysis characteristics of carrageenan-polyvinyl alcohol (CG-PVA) composite films were studied on a thermo gravimetric analyzer in N_2 atmosphere. A stepwise procedure based on model-free Flynn-Wall-Ozawa (FWO), Kissinger-Akahira-Sunose (KAS) and Friedman-Reich-Levi (FRL) methods were applied to calculate the apparent activation energies (E). The range of E for CG-PVA/LBP/K film was 16.92~171.53 kJ/mol. Coats-Redfern and master-plots methods were utilized to investigate the most probable mechanisms for CG-PVA/LBP/K film. Further kinetic analysis was performed and revealed that five independent parallel reactions were

* Corresponding author. Tel: +86 0898 66279219
E-mail address: yczhang@hainu.edu.cn (Y. Zhang)