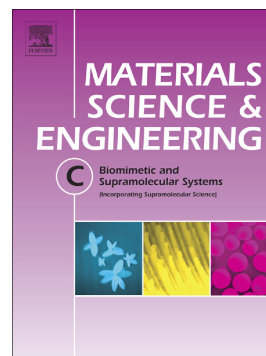


## Accepted Manuscript

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PII: S0928-4931(17)33405-7  
DOI: doi:[10.1016/j.msec.2018.03.023](https://doi.org/10.1016/j.msec.2018.03.023)  
Reference: MSC 8444  
To appear in: *Materials Science & Engineering C*  
Received date: 22 August 2017  
Revised date: 27 January 2018  
Accepted date: 22 March 2018

Please cite this article as: Jiwei Li, Jianwei Ma, Shaojuan Chen, Yudong Huang, Jinmei He, Adsorption of lysozyme by alginate/graphene oxide composite beads with enhanced stability and mechanical property. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Msc(2017), doi:[10.1016/j.msec.2018.03.023](https://doi.org/10.1016/j.msec.2018.03.023)

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**Adsorption of lysozyme by alginate/graphene oxide composite beads with enhanced stability and mechanical property**

Jiwei Li<sup>a,b,c</sup>, Jianwei Ma<sup>a</sup>, Shaojuan Chen<sup>a</sup>, Yudong Huang<sup>b,c</sup>, Jinmei He<sup>b,c\*</sup>

<sup>a</sup> *College of Textiles and Clothing, Qingdao University, Qingdao, Shandong 266071, China.*

<sup>b</sup> *State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin 150090, China.*

<sup>c</sup> *MIIT Key Laboratory of Critical Materials Technology for New Energy Conversion and Storage, School of Chemistry and Chemical Engineering, Harbin Institute of Technology, Harbin 150001, China.*

Corresponding Author \* Emails: [hejinmei@hit.edu.cn](mailto:hejinmei@hit.edu.cn) [hejinmei@163.com](mailto:hejinmei@163.com)

**Abstract**

The large-scale applications of lysozyme in the pharmaceutical industry and food industry require more efficient and cost-effective techniques for its separation/purification. In the present study, graphene oxide (GO) was encapsulated into environmentally benign sodium alginate (SA) to prepare a Ca<sup>2+</sup> crosslinked alginate/graphene oxide composite gel beads (Ca-SA/GO) which were then used to adsorb lysozyme from aqueous solutions. Compared with pure Ca<sup>2+</sup> crosslinked alginate gel beads (Ca-SA), the as-prepared Ca-SA/GO has a lower swelling degree, an improved gel stability in salt solutions, and a higher mechanical performance. This can be explained by the uniform distribution of GO sheets in the Ca-SA matrix and the existence of hydrogen bonding and high interfacial adhesion between GO filler

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