

Intensifying chitin hydrolysis by adjunct treatments – an overview

Article

Accepted Version

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To link to this article DOI: <http://dx.doi.org/10.1002/jctb.5208>

Publisher: Wiley

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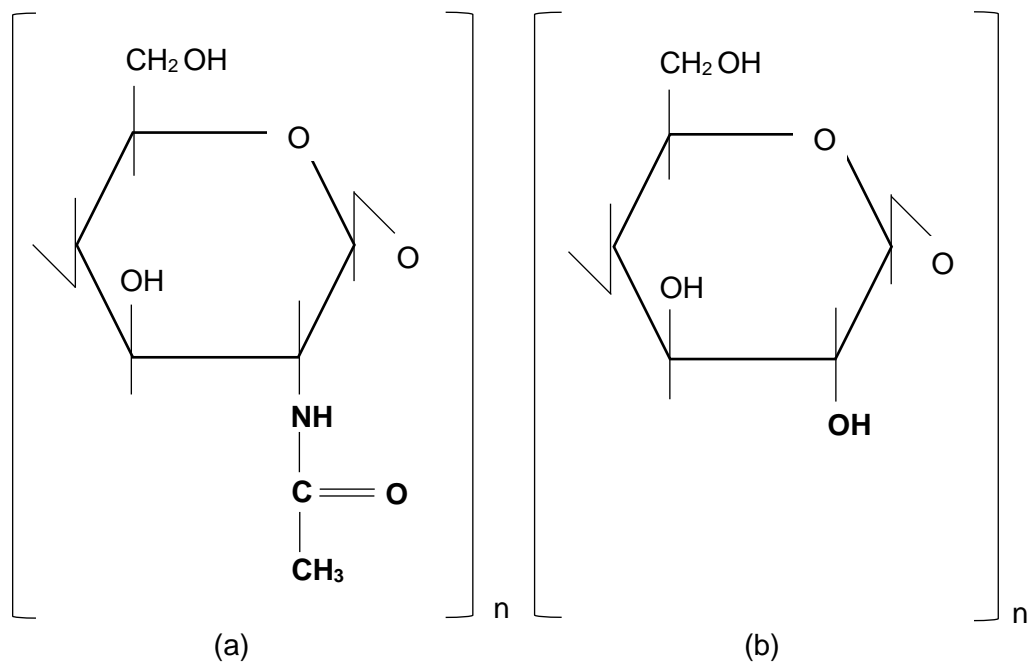


Figure 1. Chemical structures of: (a) Chitin and (b) Cellulose

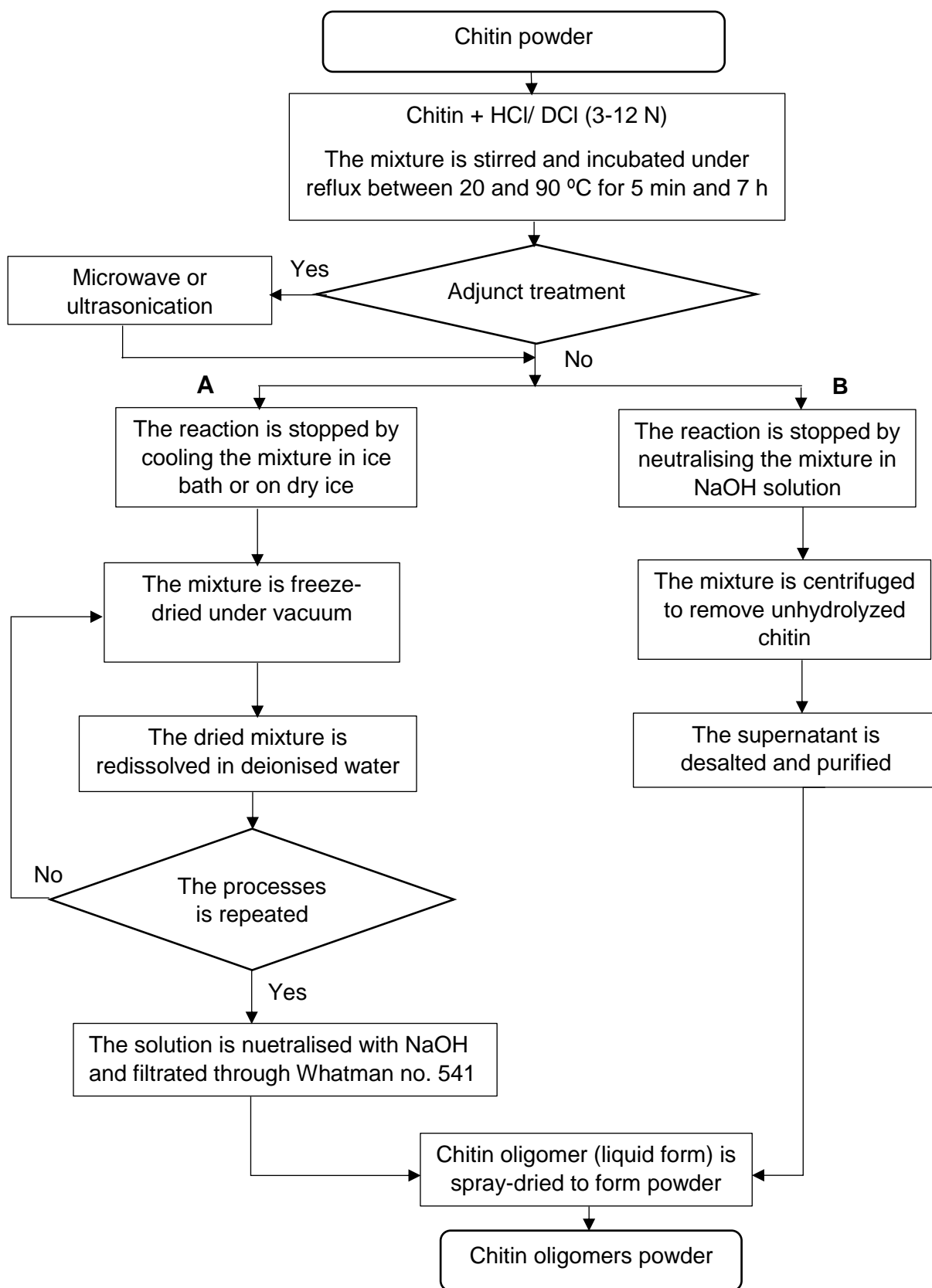


Figure 2. Process flowsheet for acid hydrolysis of chitin with or without adjunct treatment. A and B represent different method for recovering chitin oligomers from the reaction mixture. ^{27,30,32,40-42,44,45}

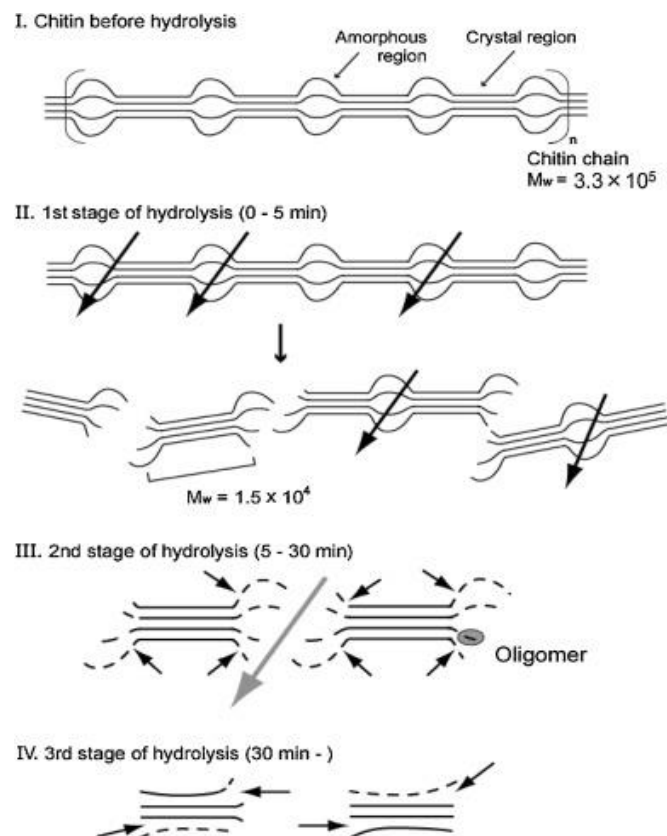


Figure 3. Possible mechanism of chitin hydrolysis in concentrated HCl. Reprinted with permission from Kazami et al.⁴⁵ Copyright 2015 Elsevier.

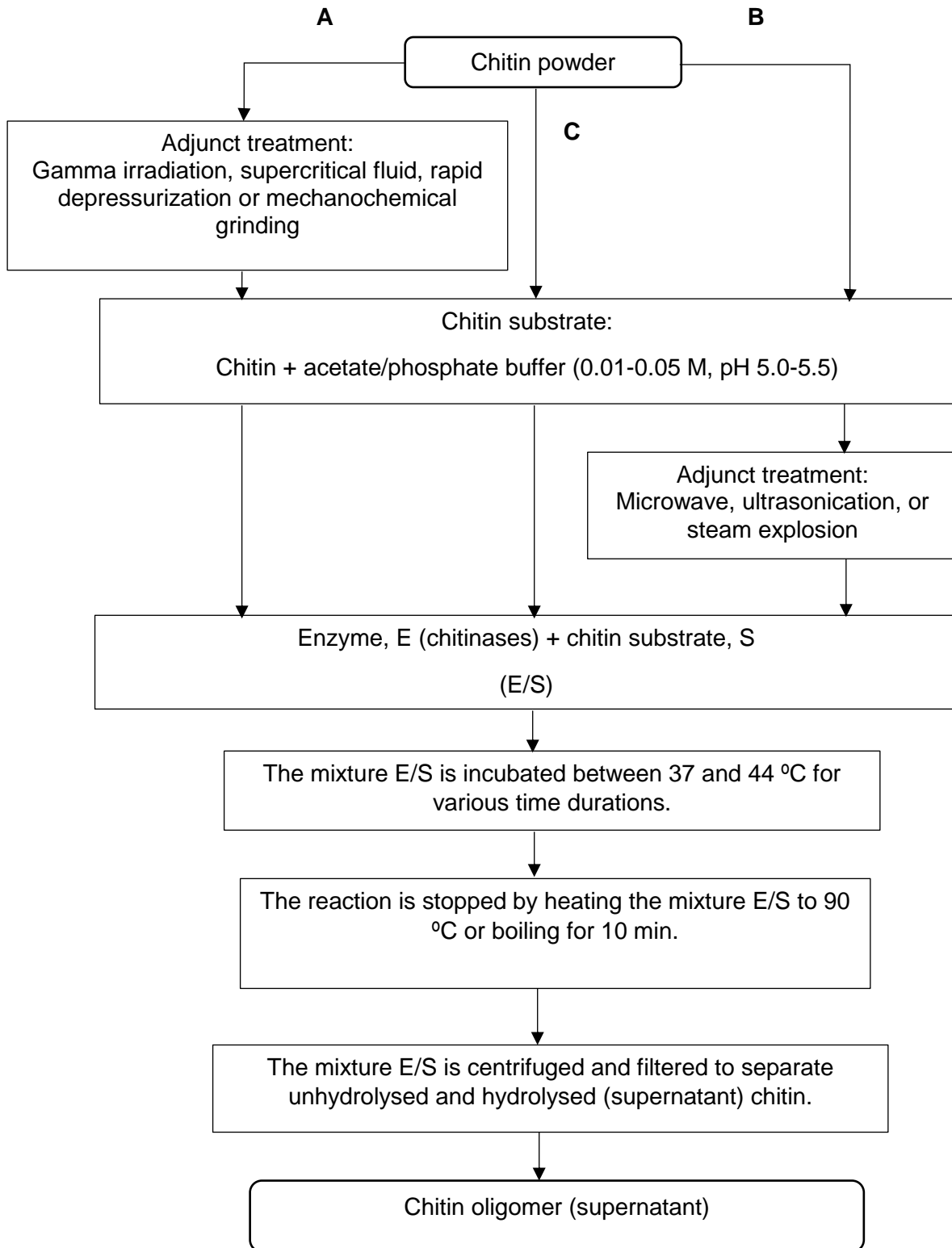


Figure 4. Flow diagram for the enzymatic hydrolysis on chitin with or without adjunct treatment. A and B represent treatment of chitin powder and chitin substrate, respectively, and C represents no treatment prior to hydrolysis. ^{31,33,35,36-38}

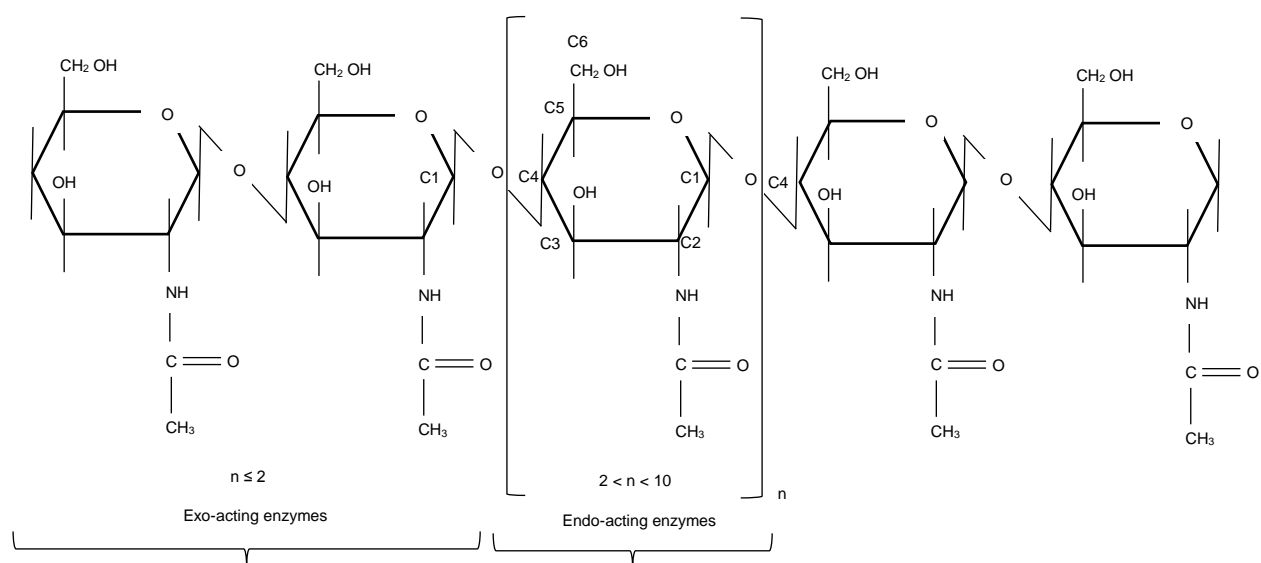


Figure 5. Structure of chitin polymer, and mechanisms of endo-acting and exo-acting enzymes on the chitin during hydrolysis.

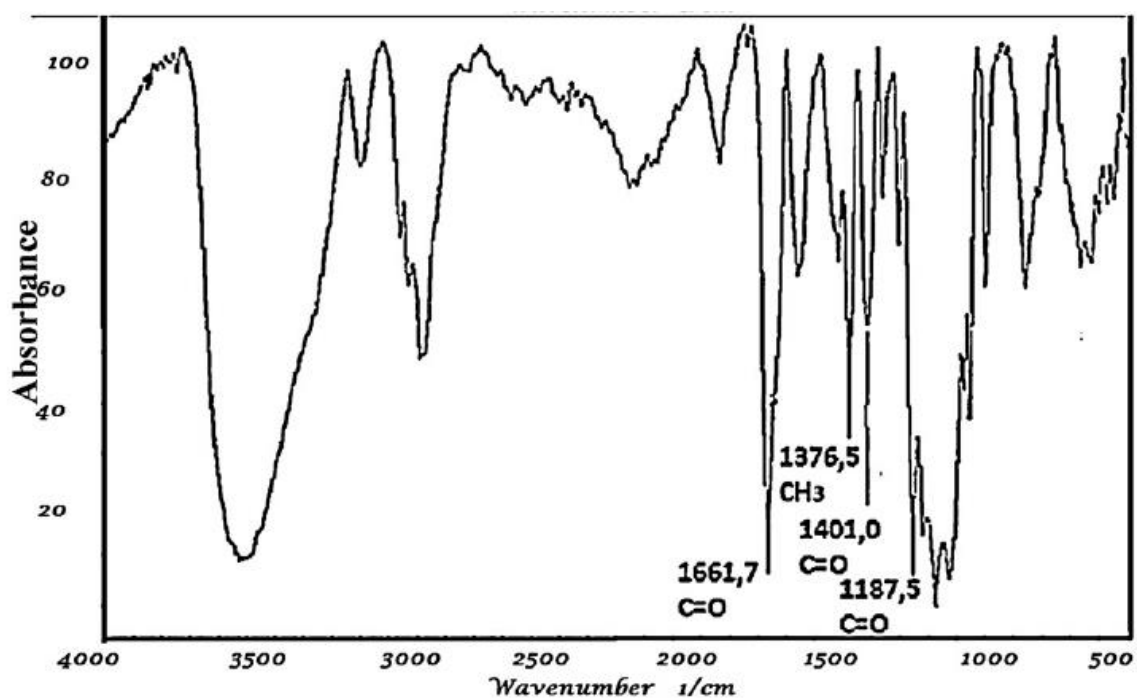


Figure 6. FT-IR spectrum of chitin oligomers. Reprinted with permission from Ngo et al.³⁰ Copyright 2008 Elsevier.

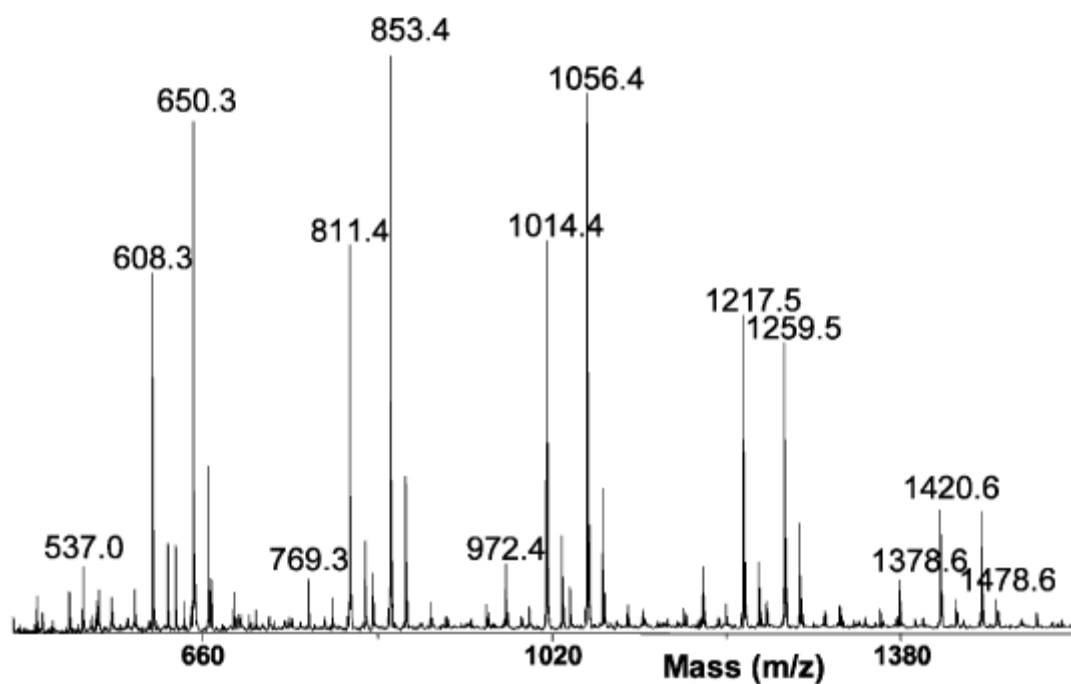


Figure 7. MALDI-TOF spectrum of the chitin oligomers with DA 90 %. Reprinted with permission from Trombotto et al.⁴² Copyright 2008 American Chemical Society.