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Influence of Process Parameters on Microcapsule Formation from Chitosan - Type B Gelatin Complex Coacervates

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Highlights

- Bio-based PCM microcapsules were produced by coacervation of CH:GB complex.
- The narrowest size distribution were achieved by increasing GB fraction at CH:GB-1:5.
- The narrowest size distribution was achieved at 30 minutes homogenization.
- Thicker and more smooth shells were observed by increasing GB fraction in complex.
- No interaction between paraffin core and CH:GB shell was observed.
- The CH:GB-1:5 ratio exhibited the highest core content in the experimental condition.

Abstract

A series of chitosan/gelatin based microcapsules containing *n*-hexadecane was synthesized through complex phase coacervation from chitosan (CH) and type-B gelatin (GB), and crosslinked by glutaraldehyde (GTA). This research was conducted to clarify the influence of different parameters on the encapsulation process, i.e., the emulsion formation and the shell formation, using zeta potential and surface tension measurements, attenuated total reflectance (ATR), and thermal analysis such as

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