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Title: Biodegradation of starch films: The roles of molecular and crystalline structure

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1 **Highlights**

- 2 • The enzymatic degradation of starch films with varied structures is
3 investigated.
- 4 • The molecular, crystalline and granular structures are varied using pre-
5 treatments.
- 6 • Two degradation mechanisms are developed for the films with varied
7 structures.
- 8 • Small starch molecules are more soluble and readily degradable by an
9 enzyme.
- 10 • The retrograded structure inhibits enzymatic degradation.

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