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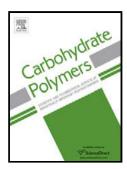
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Silica *in situ* enhanced PVA/chitosan biodegradable films for food packages

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Highlights:

- Silica was *in situ* synthesized via hydrolysis of sodium metasilicate **in presence of PVA** and chitosan solution.
- *In situ* synthesized silica improved tensile strength as high as 45% through hydrogen bonds between **silica and PVA or chitosan**
- In situ synthesized silica reduced permeability of oxygen and moisture by 25.58% and 10.2%
- Silica in situ enhanced PVA/chitosan biodegradable film for food package prolonged the
 preservation time by 3 times compared to the food without PVA/chitosan biodegradable
 film

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