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### Development of bioplastic multilayer films fabricated with PHA and HPMC using a water-based spray coating process

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Food Packaging And Shelf Life

This study presents a scalable, aqueous-based method for fabricating multilayer biopolymer films using polyhydroxyalkanoate (PHA) in aqueous suspension, eliminating the need for organic solvents. Conventional solventbased casting is ofte...

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### An Environmentally Friendly Process for Textile Wastewater Treatment with a Medium-Chain-Length Polyhydroxyalkanoate Film

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ผลงานวิจัยของกนกพร

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Web of Science แจ้งว่ามีผลงานวิจัยเรื่อง “Development of bioplastic multilayer fabricated with PHA and HPMC using a water-based spray coating process” ได้ citation งานของกนกพร สังกักรค์ จำนวน 1 บทความ ได้แก่

1. ชื่องานวิจัย “An Environmentally Friendly Process for Textile Wastewater Treatment with a Medium-Chain-Length Polyhydroxyalkanoate Film”

เรื่องที่น่าสนใจไปอ้างอิง

**Development of bioplastic multilayer films fabricated with PHA and HPMC using a water-based spray coating process**

**By** An, H (An, Hanyun); Cao, C (Cao, Chenli); He, Z (He, Zhenxiang); Hong, S (Hong, Su Jung); Kim, Y (Kim, Young-Tae); Hong, H (Hong, Habin); Wang, Z (Wang, Zhen); Lee, J (Lee, EunHyun); Shin, J (Shin, Jooyoung)

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**Abstract**  
This study presents a scalable, aqueous-based method for fabricating multilayer biopolymer films using polyhydroxyalkanoate (PHA) in aqueous suspension, eliminating the need for organic solvents. Conventional solvent-based casting is often used due to the poor interfacial adhesion and incompatible thermal properties of bioplastics, which hinder co-extrusion. However, this process suffers from low processing efficiency, solvent dependency, and weak interlayer adhesion, limiting its large-scale applicability. To address these limitations, aqueous PHA suspension was spray-coated onto hydroxypropyl methylcellulose (HPMC) films, followed by hot pressing to form a cohesive multilayer structure. Spray-coating alone caused cavities and uneven PHA

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วัน เดือน ปี ที่ตีพิมพ์

งานวิจัยเรื่อง “Development of bioplastic multilayer fabricated with PHA and HPMC using a water-based spray coating process”

ตีพิมพ์ในวารสาร Food Packaging and Shelf Life

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