



One pot ozone assisted microconstituent dislodgement from biomass hydrolysate in bioprocessing system and use thereof

TECHNOLOGY AVAILABLE FOR TRANSFER

UNMET NEED AND OPPORTUNITY

Traditional methods for lignocellulosic biomass processing face challenges in detoxification, decolorization, and efficient downstream processing. The need for a scalable, sustainable, and cost-effective solution that addresses these issues is evident. Our advanced oxidation process for rice straw hemicellulosic hydrolysate (RSH) offers a groundbreaking approach, providing a one-step solution that significantly improves biotechnological xylitol synthesis.

STAGE OF DEVELOPMENT

The technology has undergone successful laboratory-scale testing, showcasing its efficacy in detoxifying, decolorizing, and delignifying RSH. The process has demonstrated exceptional results in microbial fermentation, leading to xylitol-rich filtered broth. With its scalability and ease of use, the technology is poised for further development and commercialization.

INTELLECTUAL PROPERTY

Indian Patent Application filed

UNIQUE SELLING PROPOSITION

- **One-Step Efficiency:** Our method uses ozone, hydrogen peroxide, and activated charcoal in a single step, simplifying detoxification, decolorization, and delignification of RSH without the need for complex processes.
- **pH Flexibility:** Executed at an acidic pH, our process eliminates the need for alkaline or neutral pH adjustments. This allows cost-effective utilization of raw acid-catalyzed steam-pretreated hydrolysate, streamlining the overall procedure.
- **Activated Charcoal Reduction:** Cut activated charcoal demand by 75%, offering a cost-effective and eco-friendly alternative to detoxification.
- **Xylose Preservation:** Ensure minimal xylose loss and a slight increase in RSH xylose levels through our method, surpassing outcomes from common physical therapies.
- **Green Technology:** Our process is not just effective but also environmentally friendly, eliminating the necessity for intricate preparations. Embrace a sustainable and green solution for lignocellulosic biomass processing.

LICENSING OPPORTUNITY

BCIL is looking for suitable industrial partner for commercialization of this technology

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