

Translational Research in Environmental Biochemistry: from Lab to Implementation

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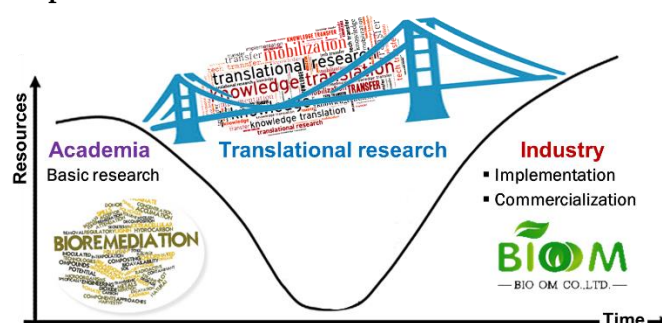
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Abstract: Background: Environmental biotechnology harnesses biological processes to address environmental issues consisting of pollution prevention and treatment as well as biomass conversion, and renewable energy production using sustainable resources. While basic research is a systematic study to gain advancement of knowledge and understand fundamental aspects of biological systems, applied research concerns with the practical application of science and technology. Translational research serves as a bridge between the two and is described as an effort to convert fundamental science knowledge into practical applications, primarily through stakeholder collaboration. **Method:** The Biocatalyst & Environmental Biotechnology Research Unit, Faculty of Science, Chulalongkorn University is dedicated to both fundamental and applied research in bioremediation and biomass bioconversion. To gain a better understanding of the impact of scientific findings on their implementation, transitional research concepts including stakeholder identification and stakeholder engagement have been applied via research collaborations with related industries and outreach activities. **Result & Conclusion:** After a decade of trial and error, two fundamental research outputs in environmental biotechnology, namely a soil remediator and insecticide-degrading enzymes, are developed and commercialized. Additionally, with supports from NSTDA, the CU innovation hub, and Faculty of Science, Chulalongkorn University, a spin-off biotechnology company called “BIO-OM” has been established.

Graphical abstract:



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Keywords: Translational research; Environmental Biotechnology; Bioremediation; Environmental Biochemistry

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