

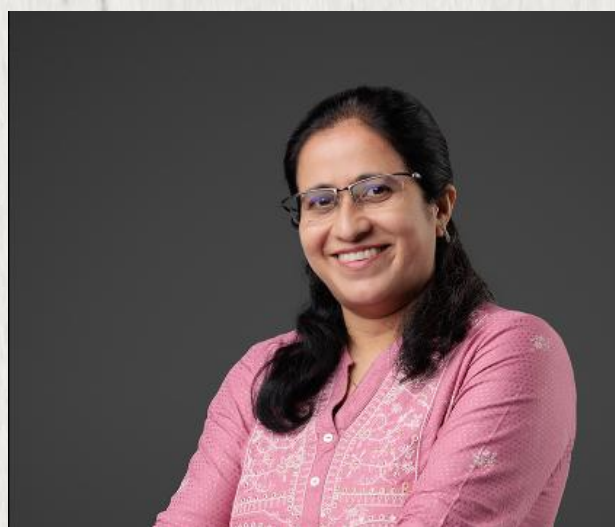
In the spotlight

Empowering the Next Generation with Sustainability: Integrating Life Cycle Assessment into Undergraduate Science and Engineering Education

Journal of Chemical Education

SUTD Authors: Chandrima Chatterjee, Mei Xuan Tan

This article describes an effective dual-faceted pedagogical strategy for performing Life Cycle Assessment (LCA) — a tool used to evaluate the environmental impact of products across their entire lifespan (cradle-to-grave), from raw material acquisition to production, use, and end-of-life disposal. At the Singapore University of Technology and Design, LCA is introduced to first-year undergraduates in a course called Science for a Sustainable World. Using a dual approach of combining custom Excel spreadsheets, and a specialized software tool, Ansys Granta EduPack, students learn and understand how LCA is performed on real-world products, including carrier bags, ball-point pens, single-use plastic items throughout their entire life cycle. This instructional model fosters 21st Century skills, including critical thinking, and problem-solving, while raising awareness of environmental sustainability. The authors present a pedagogical framework for integrating LCA that can be adapted across diverse undergraduate science and engineering programs, enabling universities to equip students with an essential sustainability competency.



“This instructional model fosters 21st Century skills, including critical thinking, and problem-solving, while raising awareness of environmental sustainability.”

- Chandrima, Mei Xuan

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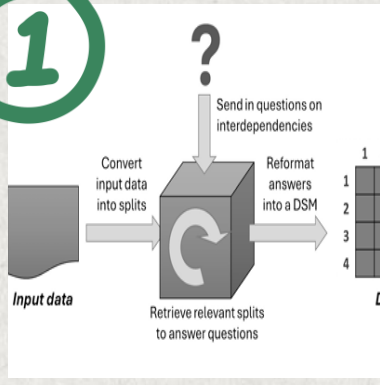
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SUTD Authors: Teo Tee Hui, Lin Qianrui, Fu Yiyang

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SUTD Author: Gordon Tan Kuo Siong

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Journal Of Community Practice

SUTD Author: Yohei Kato

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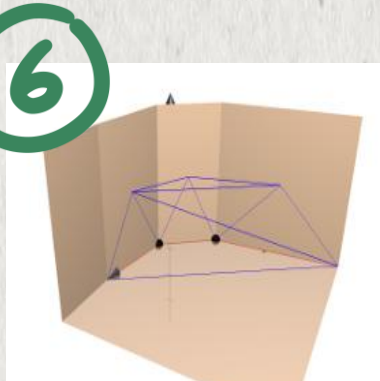
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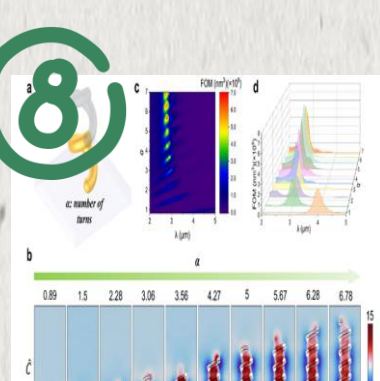
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SUTD Authors: Chang Chia-Te, Zhou Xiaoyan, John Chan You En, Wang Hongtao, Joel Yang, Dmitrii Gromyko, Wu Lin

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