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## Green energy animation and hologram projection: Methane ice formation and mining techniques learning system

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This project uses "methane ice formation and mining techniques" as the theme to transfer their associated knowledge to general science education based on storytelling, scenario design, character design, interaction design, and hologram projection technologies. There are two learning systems developed in this project. The first learning system is called "The animation learning system for methane ice formation and energy transformation". The second learning system is called "The hologram projection learning system for the knowledge Kernel and structure recognition of methane ice". Two activities had been held to invite elementary school students and high school students to learn the science of methane ice by the two systems developed in this project. The evaluation results show that the usability of these two systems are very good to both elementary school and high school students. The result gets rid of the factors that the learning achievement of methane ice science learning been affected by unfriendly system design. Further learning achievement evaluation based on ARCS learning motivation model will be performed to show the affordance of the methane ice science learning mechanism proposed in this project.

### Biography

Chieh-Ju Huang is Lecturer in Design, Department of Commercial Design at Chienkuo Technology University. She has worked professionally with Service Design, Design Thinking, User Experience, and Educational Board Game Design. Now she is a PhD candidate in Doctoral Program in Design, College of Design, National Taipei University of Technology.

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