



Contribution ID: 148 Contribution code: S1 Physics Innovation

Type: Oral Presentation

## A study on optics: Invisibility properties of a lenticular lens

*Friday, June 24, 2022 2:45 PM (15 minutes)*

An invisible cloak is an appliance that is frequently mentioned in many pieces of non-scientific literature as an attention-grabbing component. It can cause any desired object to disappear while the observer will still see its surroundings, i.e., the object under its effect becomes translucent. A similar effect can be demonstrated in laboratories by using optical instruments such as a lenticular lens. The mechanism in which the lenticular lens uses to hide the object was theoretically and experimentally investigated in this research through the knowledge of geometrical optics, especially the ray-tracing analysis. A discussion on the aspects of wave optics was also conducted to obtain a comprehensive understanding of the phenomenon. To verify the theory, a computational simulation was created based on the proposed theory. The simulation result was compared with results from the experiment under various conditions such as the distance from the object to the lenticular lens. The method used in this study can be applied in the classroom to enhance students' understanding of the geometrical optics and wave phenomenon.

**Primary authors:** PRASUTHAM, Bangon; TANALIKHIT, Pattarapon (Department of Physics, Korea Advanced Institute of Science and Technology); HAYEEBEELUNG, Tasmee; WORAKITTHAMRONG, Thanabodi (King Mongkut's University of Technology Thonburi)

**Co-author:** KANCHANAPUSAKIT, Wittaya

**Presenters:** PRASUTHAM, Bangon; HAYEEBEELUNG, Tasmee; WORAKITTHAMRONG, Thanabodi (King Mongkut's University of Technology Thonburi)

**Session Classification:** S1 Physics Innovation

**Track Classification:** Physics Innovation