

計算機與虛擬光學：
探究未知的光傳播可能性
Computer and Virtual Optics Experiment:
Exploring New Possibilities of Light Propagation

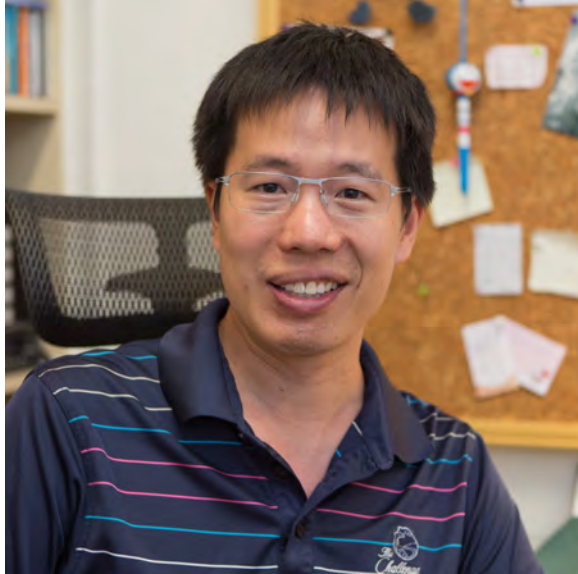
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Abstract

By means of computer simulations, we investigate new possibilities of optics. Light propagation that is difficult to analyze experimentally. Numerical solutions of Maxwell's equations are calculated to accurately simulate an optics experiment. Here we model continuous-wave (CW) light propagation and scattering in a scattering medium. Specifically, we explore the feasibility of focusing light through a scattering medium with specific amplitude and phase. Simulation research findings may provide essential information to enhancing the effectiveness of light propagation through scattering medium.



Snow H. Tseng received a B.S. degree in physics from National Taiwan University, Taipei, Taiwan, in 1994; a M.S. degree in physics from University of Chicago, Chicago, IL, in 2001; and a Ph.D. degree in electrical engineering at Northwestern University, Evanston, IL, in 2005. Beginning in 2006, he joined the Graduate Institute of Photonics and Optoelectronics and Department of Electrical Engineering of National Taiwan University as an assistant professor. In 2010, he was promoted to an associate professor. Based upon rigorous solutions of Maxwell's equations using the pseudospectral time-domain (PSTD) technique, his general research interest is in the optical interactions of biological tissues and electromagnetic wave propagation in random media. In recent years, he has devoted his attention to exploring the possibility to enhance delivery of light deeper into biological tissues to help furtherance of biomedical optics techniques.