

## Photopolymer Characterization for Optical Fabrication and Holographic Storage

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### Abstract

Photopolymers are extremely important materials in the creation of the next generation of optical and optoelectronic devices such as solar cells, integrated 3D optical circuits and data storage discs. Due to the demand for high density data storage, and with magnetic tapes reaching their limit, a new method of storing data is needed. Photopolymers are the material of choice for this market because of their self-processing properties and their low cost. In order to make these applications a reality an accurate model of how these materials behave during recording is needed. The aim of this project is to advance the understanding of the photopolymer material during and after holographic recording so as to better develop the models that are already in place to describe the process. The project gives emphasis to the diffusion rate effects of the photopolymerization process that occur throughout the holographic recording and the potential effect this has on the photopolymer material.

### Biography

Ra'ed Malallah has graduated from the University of Basrah at BSc (1997) and MSc (2006) in the Communication / Microwave field. He has been a member of teaching staff (Lecturer) at the Physics Department, Faculty of Science, University of Basrah since 2007. He got his PhD from University College Dublin (2017) in Holographic Storage and Self-Written Waveguide field using photopolymer materials as a recording media. He is working in Optics, Photonics and Microwave Communications. He has been serving as a guest-editor of reputed MDPI- Polymer's Journal, and serving as a reviewer for several journals. He is a member in Optical Society of America (OSA); and the international society for optics and photonics (SPIE).

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