

Observations of spectral hole-burning based ultraslow light

J. S. Han and B. S. Ham*

Center for Photon Information Processing, and the Graduate School of Information

and Telecommunications, Inha University

253 Yonghyun-dong, Man-gu, Incheon 402-751, S. Korea

**Corresponding author: bham@inha.ac.kr*

Abstract:

We have observed ultraslow light using a persistent spectral hole in a rare-earth doped solid medium. Unlike two-photon coherence based slow light such as electromagnetically induced transparency, the present method relies on one-photon absorption and has an advantages of simple scheme to generate the ultraslow light and to apply it for some potential applications such as dynamic all-optical switching. We present various demonstrations of switching, routing, and buffering.