

### Controlled release of brilliant blue FCF from doped hybrid xerogel

주현우, Zhijian Wu, 이강택\*  
연세대학교  
(klee@yonsei.ac.kr\*)

We investigate a controlled release of brilliant blue FCF (BBF) from the doped hybrid xerogels by considering the effects of release media, precursors, and dopants. The three release media used are acidic, neutral, and basic solutions. In the xerogel preparation, tetraethoxysilane (TEOS), methyltriethoxysilane (MTES), vinyltriethoxysilane (VTES), propyltriethoxysilane (PTES), and phenyltriethoxysilane (PhTES) are used as precursors, and cetyltrimethylammonium bromide (CTAB), sodium dodecyl sulfate (SDS), and hydroxypropyl cellulose (HPC) as dopants. Our experimental results suggest that BBF release can easily be controlled by using organosilanes as well as TEOS as precursors and/or by adding dopants. We find that the experimental results can be well explained by considering the electrostatic, hydrophobic, and aromatic-aromatic interactions between BBF and xerogel matrices/dopants.