Abstract

In this work organic chromophores were investigated, which should be used as degradation reagents of organic chromophores that can pose as dyes on textiles. Naphthalimides were established as such potential photobleaching agents. Dye degradation was also observed when using sub-stoichiometric amounts of the naphthalimides, which indicates a photocatalytic process. Based on this results, various naphthalimides were produced as potential photocatalysts and investigated with respect to their photophysical properties and their stability.

The focus of this work was the degradation of different organic dyes and dye systems in the presence of naphthalimides and under exposure to UVA light. With this method many modelchromophores that were used as test substrates could be successfully degraded. The underlying mechanism was investigated; however, no clear indication could be obtained. To generalize the degradation concept, the physical properties of the naphthalimides were compared with those of common organic photoredox catalysts. Benzophenones and anthraquinones were thus investigated and used as potential degradation reagents. Dye degradation could also be detected in the presence of these catalysts. With this, the degradation concept could be generalized.