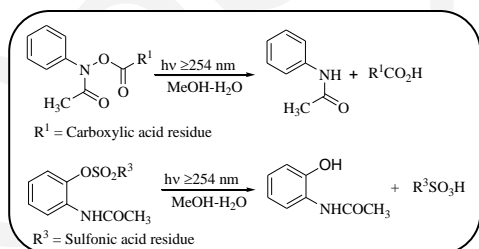


Newly Developed Nonionic Photoacid Generators and Their Applications

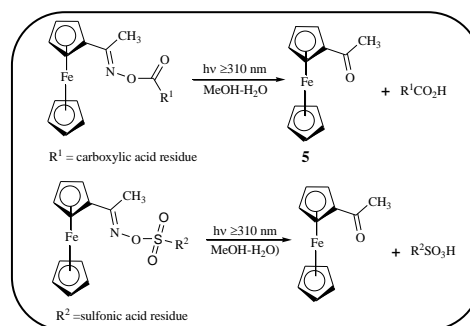
Our main focus is to design and develop new types of nonionic photoacid generators (PAGs) for both carboxylic and sulfonic acids based on N-O bond cleavage chemistry. Further, we are also interested to investigate the applications of newly synthesized PAGs in polymer and surface chemistry.

With this intention, we have targeted N-hydroxy aromatic compounds such as *N*-phenylhydroxylamine, 1-acetylferroceneoxime, 1-hydroxy-2(1H)-quinolone, and *N*-hydroxyanthracene-1,9-dicarboxyimide (HADI) as PAGs, since they have weak N-O bond which can be easily cleaved by direct photolysis.

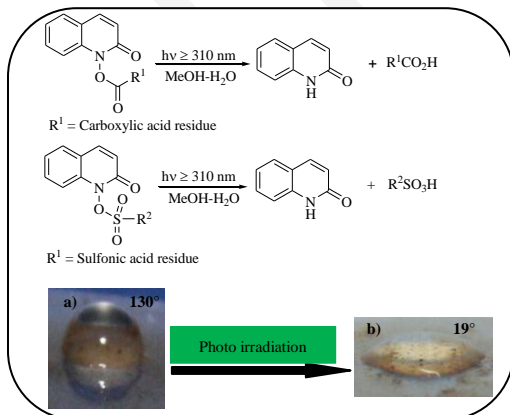
The thesis entitled “**Newly Developed Nonionic Photoacid Generators and Their Applications**” consists of five chapters. **Chapter-1** provides the general introduction to Photoacid Generators (PAGs) and their applications. **Chapter-2** explains in detail about the photophysical and photochemical properties of newly synthesized PAGs based on *N*-acyl-*N*-phenylhydroxylamines for carboxylic and sulfonic acids. **Chapter-3** describes 1-acetylferroceneoxime based PAGs for both carboxylic and sulfonic acids. **Chapter-4** elaborates the design and synthesis of 1-hydroxy-2(1H)-quinolone based PAGs and their applications in the construction of photoresponsive polymer surfaces. **Chapter-5** describes in detail about the synthesis, photophysical and photochemical properties of newly designed fluorescent PAGs based on *N*-hydroxy anthracene-1,9-dicarboxyimide and their application towards the development of photoresponsive organosilica surface



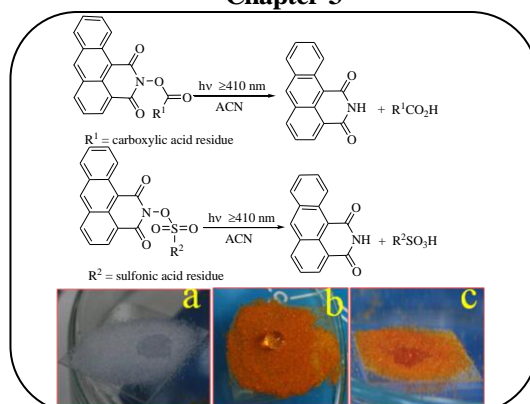
Chapter-2



Chapter-3



Chapter-4



Chapter-5