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Efficiency enhanced greener approach for bromination of activated aromatic compounds

Deshani K.A.L.N. and Wadumethrige S.H.*
[1]*Department of Chemistry, University of Ruhuna, Wellamadama, Matara, Sri Lanka.*

Bromination reactions are important in organic synthesis because the generated organobromides can be used as building blocks in a variety of syntheses due to their versatility. The use of the toxic and highly reactive molecular bromine (Br_2) makes these brominations difficult and dangerous. Other synthesis processes involve toxic modified brominating reagents like N-bromosuccinimide (NBS) or expensive bromine carrying agents. Most of them are still hazardous due to liberated bromine. A new *in-situ* bromination of activated aromatic compounds which is quick, cheap, safe, effective and greener method was studied by using solid $KBrO_3$ and aqueous NaBr in glacial acetic acid in 45 minutes at room temperature. Vanillin, 2-Nitroaniline, 4-Niroaniline, 4-Aminobenzoic acid (A1-A4) were subjected to the bromination in triplicates and higher average yield of brominated products 78.67%, 89.79%, 88.68% and 73.24% obtained respectively. Furthermore, this insitu bromination process was enhanced by adding 10%(w/w) amount of silica gel and increased average yields obtained for 5-Bromo-4-hydroxy-3-methoxy-benzaldehyde (88.02%), 4-Bromo-2-nitroaniline (93.45%), 2-Bromo-4-nitroaniline (93.14%) and 2-Bromo-4-aminobenzoic acid (85.21%) at the same reaction conditions.

Keywords: In-situ Bromination, Organobromides, N-bromosuccinimide activated aromatic compounds, Silica gel

*Corresponding author: hemalika@chem.ruh.ac.lk