

SUPPLEMENTARY INFORMATION

MECHANISM OF THE SELECTIVE SULFIDE OXIDATION PROMOTED BY $\text{HNO}_3/\text{FeBr}_3$

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Figure S1: Absorption vs time at $\lambda=388$ nm for the reaction of **1b** with HNO₃ (13 %) and FeBr₃ (5%) at 25 °C.

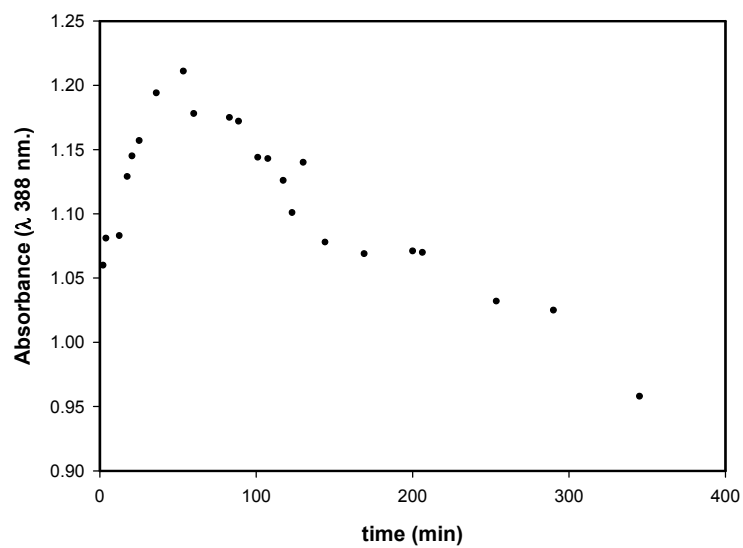
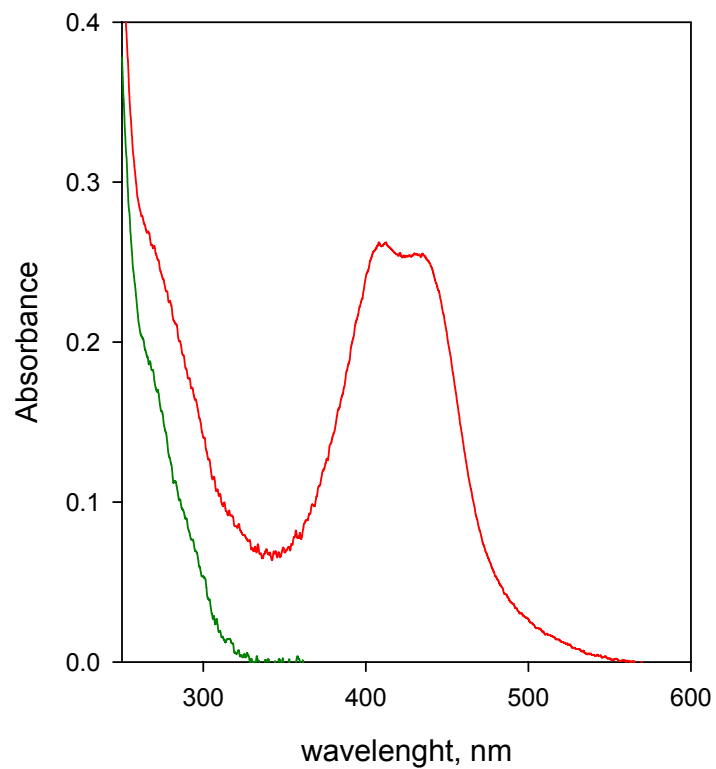


Figure S2: Spectrum of triphenylbenzylsulfide in acetonitrile (green line) and the product formed after 5 minutes of reaction in the presence of 5% FeBr_3 and 13 % HNO_3 (red line)



Oxidation of 4-(methylsulfanyl)benzaldehyde **1b with NO₂(g)**

0.8 mmole of **1b** were dissolved in 1.6 mL of acetonitrile and NO₂ was bubbled through the solution with a stream of N₂. The NO₂ was generated by dropping concentrated HNO₃ on Cu metal. The solution was checked from time to time until all the substrate disappeared. At this time, the solvent was evaporated and the reaction product analyzed by gas chromatography and NMR. The sulfoxide was the only product formed.