

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Laboratory observation of iodine smoke produced by broad band photolysis of I₂ in the presence of O₃, with no water added. The lamp visible light scattered by the smoke particles is observed through a view port situated the side of the flow tube.

File Name: Supplementary Movie 2

Description: Born-Oppenheimer Molecular Dynamics (BOMD) simulations. The water droplet system contained 191 water molecules and one I₂O₂ molecule and was simulated for 50 picoseconds.

File Name: Supplementary Movie 3

Description: As Supplementary Movie 2 for I₂O₃ and 80 picoseconds simulation time.

File Name: Supplementary Movie 4

Description: As Supplementary Movie 3 for I₂O₄ and 33 picoseconds simulation time.