*Crystals* **2015**, *5*, 534-550; doi:10.3390/cryst5040534

OPEN ACCESS

*crystals*

**ISSN 2073-4352**

www.mdpi.com/journal/crystals

*Supplementary Information*

# Physiochemical Characterization of Iodine (V) Oxide Part II: Morphology and Crystal Structure of Particulate Films

**Brian K. Little [1,*], Samuel B. Emery [2] and C. Michael Lindsay [3]**

[1] University of Dayton Research Institute, U.S. Air Force Research Laboratory, Eglin AFB, FL 32542, USA

[2] Naval Surface Warfare Center Indian Head Explosive Ordinance Technology Division, Indian Head, MD 20640, USA; E-Mail: samuel.emery@navy.mil

[3] U.S. Air Force Research Laboratory, Energetic Materials Branch, Eglin AFB, FL 32542, USA; E-Mail: c.lindsay@us.af.mil

* Author to whom correspondence should be addressed; E-Mail: brian.little.14.ctr@us.af.mil; Tel.: +1-850-882-8968; Fax: +1-850-882-3540.

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(1) The first supplementary figure contains images of pre and post sonicated suspensions of $HI_3O_8$ and their observed discoloration due to the presence of $I_2$.

(2) The second supplementary figure is a collection of optical microscopy images for crystals of various shapes.

(3) The third supplementary figure illustrates the deposition quality between drop cast and spun cast $HI_3O_8$ particles onto glass substrates.

(4) The fourth supplementary figure contains images of spun cast films at three different spin rates.

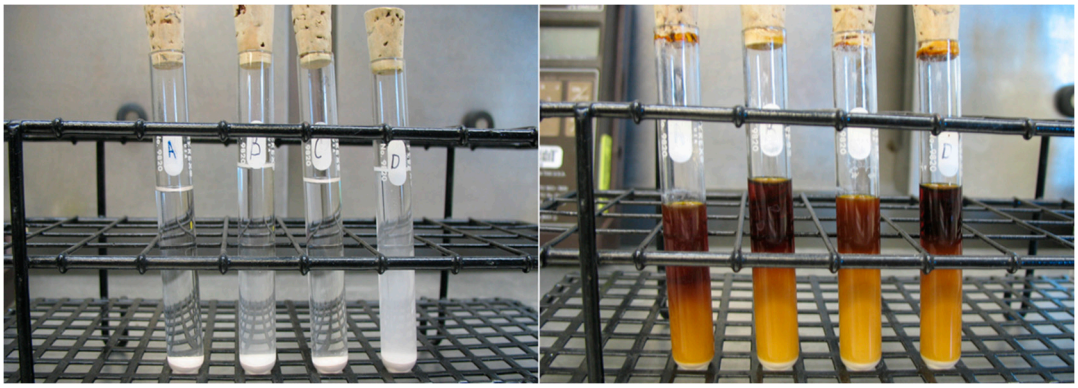


**Figure S1.** (**Bottom left**) Presonicated suspensions of $HI_3O_8$ powder in (**a**) denatured ethanol; (**b**) 200 proof ethanol; (**c**) 200 proof ethanol: acetone; and (**d**) 200 proof ethanol: methanol. (**bottom right**) post sonicated suspensions after 24–48 h at 30 °C.

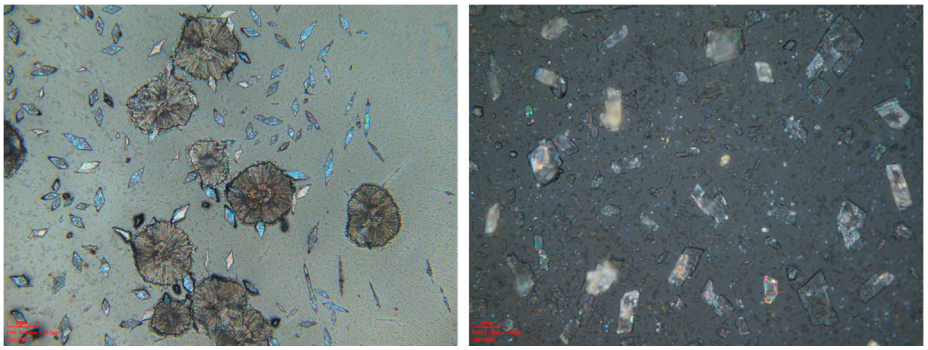

**Figure S2.** Microscopy images of preliminary drop or spin cast films at 40% relative humidity or higher from an ethanol or 1:1 blend of ethanol with ketones/acetates/methanol. Rhombohedral shaped crystals (**bottom left**) and plate shaped crystals (**bottom right**).

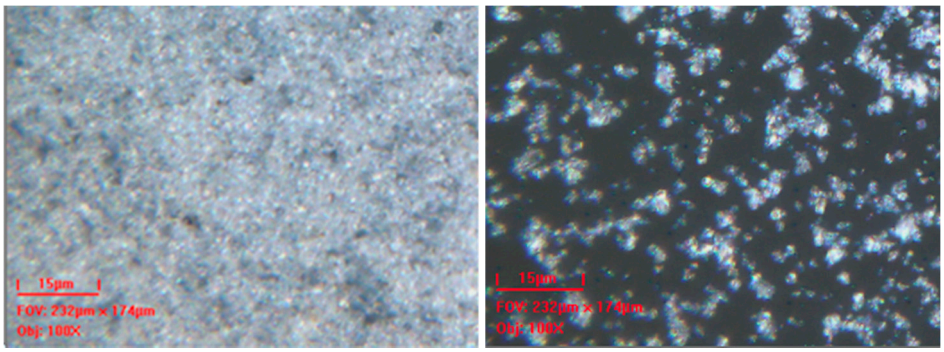


**Figure S3.** Optical microscopy images of preliminary drop cast (**bottom left**) and spin coated (**bottom right**) films at 2% RH from a 200 proof ethanol sonicated suspensions of $HI_3O_8$ particles. Film spin coated at 1000 rpm.

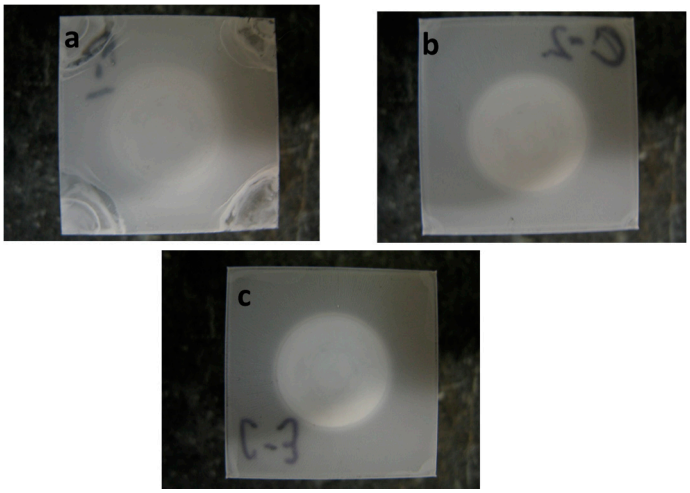


**Figure S4.** Images of spun cast films deposited onto glass substrates at (**a**) 500 rpm; (**b**) 1500 rpm; and (**c**) 2500 rpm. Shaded circle area in the center is the support stub for the substrate.