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REPORT on L/N: 30325

PHASE I: Photomicrographic Images
"Advanced Materials Specimen Collection"

RE: [redacted]

NOTE: ***Phase II and III for LN 30325 will be addressed in a separate report***

INTRODUCTION

A collection of three (3) specimens were received by [redacted] Photomicrographic Imaging and Evaluation Assessment Analysis for nanotechnology as a possible biosensor and/or nano vehicle sensor architectural designed advanced materials. The specimens were forwarded to our contract laboratory, [redacted] for photomicrographs of the specimen(s) (front and back).

The original specimens of the current report are for Phase I: Photomicrographic Images as LN 30325 from tracking number of specimens 9405 5036 9930 0058 2456 12 dated June 21, 2017 (SK/MP).

The specimens of LN 30325 underwent further analysis utilizing EDS/SEM and RAMAN/Micro FTIR technologies as requested by client. These results will be addressed in separate report for Phase II: EDS/SEM Microscopy and Phase III: Raman/Micro FTIR Spectroscopy.

If no further analysis is requested to be performed on the specimen(s) they will stay in storage as directed by client or will be returned to IHS and/or disposed of per laboratory procedures of specimens. If not identified to be returned to client at original request of initiation of this project, then the specimens are the property of [redacted] and/or [redacted]

[redacted]

After all analysis and/or imaging is performed a copy of the "Chain-of-Custody" form will be attached to this report located at the end of this report with the final signature Chain-of-Custody upon final completion of all analysis to be performed. The final COC will be sent to [redacted] from the laboratory after all work is completed and specimen not left in storage at the laboratory.

The foreign body specimen or advanced material specimen(s) appear on general observation of the Photomicrographic imaging are composed of sensors/electrical piece parts that have been associated with parts that are utilized in a wireless sensor body network (US Patent: 2013/0194092 A1 – Unlocking a Body Area Network Assignee Qualcomm Incorporated, San Diego, CA) is part of the collaborative research and developmental global projects that are addressed in the text book: Three-Dimensional Integration of Semiconductors: Processing, Materials and Applications by Kazuo Kondo, Morihiro Kada and Kenji Takahashi, Editors. Springer, Heidelberg, Germany © 2015. This would include the use of "invisible circuits" and their designed network systems. The individual pieces are considered nano advanced materials piece parts in the design of an integrated fusion system as applied to remote sensing technologies.

The use of waveguide designs (triangles, squares and hexagons) in pulsed systems, photovoltaic devices, nanoscale cavities and plasmonics utilizing Q factors composed of glass, disk and metal (silver) and spaser are addressed in the text book: Computational Nanophotonics: Modeling and Applications by Sarhan M. Musa, Editor. CRC Press/Taylor & Francis Group, Boca Raton, FL © 2014.

The applications of ocular biosensors and optical photonic sensors are addressed in the text: Biophotonics: Biological and Medical Physics, Biomedical Engineering by Lorenzo Pavesi and Philippe M. Fauchet (Eds.). Springer-Verlag, Berlin, East Germany © 2008.

The use of sensors, semiconductors, waveguides and other electronic components as organic electronics, i.e. the field of (opto) electronic devices utilizing organic active layers that include the following areas of organic light-emitting diodes (OLEDs), organic field-effect transistors (OFETs) and organic photovoltaics (OPVs). These nanotechnologies are utilized in the synthetic pi-conjugated small molecules and polymers, whose photoluminescensce and electroluminescence span a broad spectral range; the ease of fabricating organic thin films by well-established techniques such as thermal evaporation, spin coating, and inkjet printing; and the mechanical flexibility and compatibility of organics with substrates such as glass and plastic. As a result the devices are amenable to large-scale fabrication and are expected to be of low cost. The use and development of organic electronic sensors is addressed comprehensively in the text: Organic Electronics in Sensors and Biotechnology by Ruth Shinar and Joseph Shinar. McGraw-Hill/Biophotonics, New York, New York © 2009.

Additional text book materials were utilized in the evaluation and assessment of the advanced material architectural designs of the specimens, which included the following, but were not limited to:

1) National Nuclear Security Administration (NNSA): Physical, Chemical and Nano Sciences Center Research Briefs, 2006 Sandia National Laboratories, Albuquerque, New Mexico.

2) Nanoweapons: A Growing Threat to Humanity by Louis A. Del Monte, Potomac Books, an Imprint of the University of Nebraska Press. Lincoln, Nebraska © 2017.

This report specifically addresses the images, evaluation, assessment and results for Phase I: Photomicrographic Imaging. The results of these scientific optical analysis results are attached to this report. The final Chain of Custody form will be forwarded to the client upon receipt from the appropriate lab(s). The Phase II: EDS/SEM Spectroscopy and Phase III Raman/Micro FTIR Microscopy Analysis Report on these thirteen specimens (LN: 30325) will be addressed in a separate report dated September 5, 2018 by the same author.

DISCUSSION and RESULTS

Phase I: Photomicrograph (Images) L/N: 30325)
The photomicrographs (images) were taken using a SZ-PT Olympus: SZ4045 Microscope in Stereo, utilizing reflected light on bright field at specific magnification settings of 30x and 80x.

Review Chain of Custody (COC) to determine location of specimen from the submitting individual and its history.

OBJECT 1: Sample "IHS-0621-2017/1" [redacted]
Side A, Magnification 13.4x and 80x
L. Posterior Neck (SK) (6/21/2017)

Comparing both the 13.4x and the 80x magnifications of Side A you can clearly see that the specimen is cupped with a part on top of another part. The 13.4x image shows 2 fibers coming out from specific areas of a bar ridged area to a flat surface (maroon color) to another bar. This image is hand drawn on the chain of custody form dated June 23, 2017.

The center area of 13.4x shows a circular spheroid, which appears to be a CMOS or similar electrical component. Looking at the 80x magnification of the same area we see that the sphere (gray color is under the other top layer, which has a rolled edge. Note the fiber going straight up at and note the particles of 3 to 4 linked to a bar segment and then it continues the set again and again. This is a nano belt that may be used as an antenna. The same is for the fiber extending at 3 o'clock in the 13.4x magnification image.

Both images show micro array patterns, which appear to be done in an integrated circuit design.

Side B, Magnification 13.4x and 80x (says 13.4x larger image).
A very distinct image of the fiber antenna extending out of the advanced material specimen (maroon body) is show with two fibers extending upward. Note the micro array patterning on the surface of the specimen, which upon looking at the 13.4x image (really 80x) you can

see a clear and distinct gray/silver spheroid with a pattern of "cross" and flower (4 petal design). Note the fluorescent green spheroids between 7 and 11 o'clock as well as ones between 1 and 2 o'clock. At 1 o'clock you can see a distinct circuit design. At 6 o'clock you can see the open pucker of a nano lip.

OBJECT 2: Sample "IHS-0622-2017" ([redacted])
Side A, Magnification 13.4x and 80x
3 PM Specimen

The images of Object 1 and 2 are similar, but Object 2 has a specific micro array pattern of an integrated circuit design as found in biomaterials. Note the patterns of white spheroids/particles in groups of 3 and 4 chain as a short nano necklace would be designed as well as a specific cluster of triangular designs on its surface. The referenced texts at the beginning of this report makes reference to triangular, square, hexagonal and circular designs.

The 80x magnification shows the layers of the dark maroon advanced material as well as circuit designs and thin film coatings on its surface. Fluorescent green particles and/or spheroids are present throughout its surface. Looking at the edges of the specimen around 5 and 6 o'clock you can see a chain loop as well as small bow tie configurations with a center primary spheroid, which appears to be a nano-silicon CMOS or similar component.

The third image of Object 2 at 80x shows the layered mesogenic design upon another structure. Note the rolled edge of the smaller specimen on top of the larger one and 2 particles within its edge. The edge appears to be an ion channel as designed by NRL.

Looking at the last Side A, 80x magnified image you can clearly see the integrated circuit design. Center area having spheroid with triangular petals to form a cross like structure.

Side B, Magnification 13.4x and 80x
The collection of these particular images show the mesogenic maroon material, which is a design for an ion channel waveguide.

Examining the 80x magnification at the 9 o'clock area at the edge of the ion channel you clearly see 2 loops. These loops are used to allow a hook to hook on to them for removal per removable implanted advanced materials.

The next image showing the fiber antenna at 6 o'clock, while looking at 10 o'clock you can see a figure 8 or bowtie. The same design is in the center of the specimen. This type of design is used for optical chirality in 3D and 4D nanogeometries based structures as developed for nanokirigamie techniques at MIT by Professor Nicholas X. Fang as published in Science Advances (doi:10.1126/sciadv.aat4436).

Note at 6 o'clock above the antenna you see a triangular cross embossed on the maroon surface as a 2D structure imprint on a 3D surface.

OBJECT 3: "IHS-0621-2017/2" [redacted]
Side A, Magnification 13.4x and 80x
L. Posterior Knee (SK) (6/21/2017)

This specimen is of particular interest because it has a 2D design (red on a pink to cream surfaced material) on its surface as well as a thick fiber coming out of its head body area. The image is very similar to a dicot seed (Example: a lima bean seed vs. a monocot seed, corn) opening up with a single root. Fluorescent thin film or coatings of fluorescent at center 3 o'clock you see specific particles or spheroid cups on its edge.

The 80x magnification shows a fluorescent coating on the specimen and a specific bar loop as a hook across the center of the specimen. Note integrated circuit design features. The second image showing more of the thin film coating shows that the red maroon surface has integrated circuit designs as well as the thin film coating. A beautiful image of this advanced nanotechnology designed electronic feature is in the last image at 80x magnification.

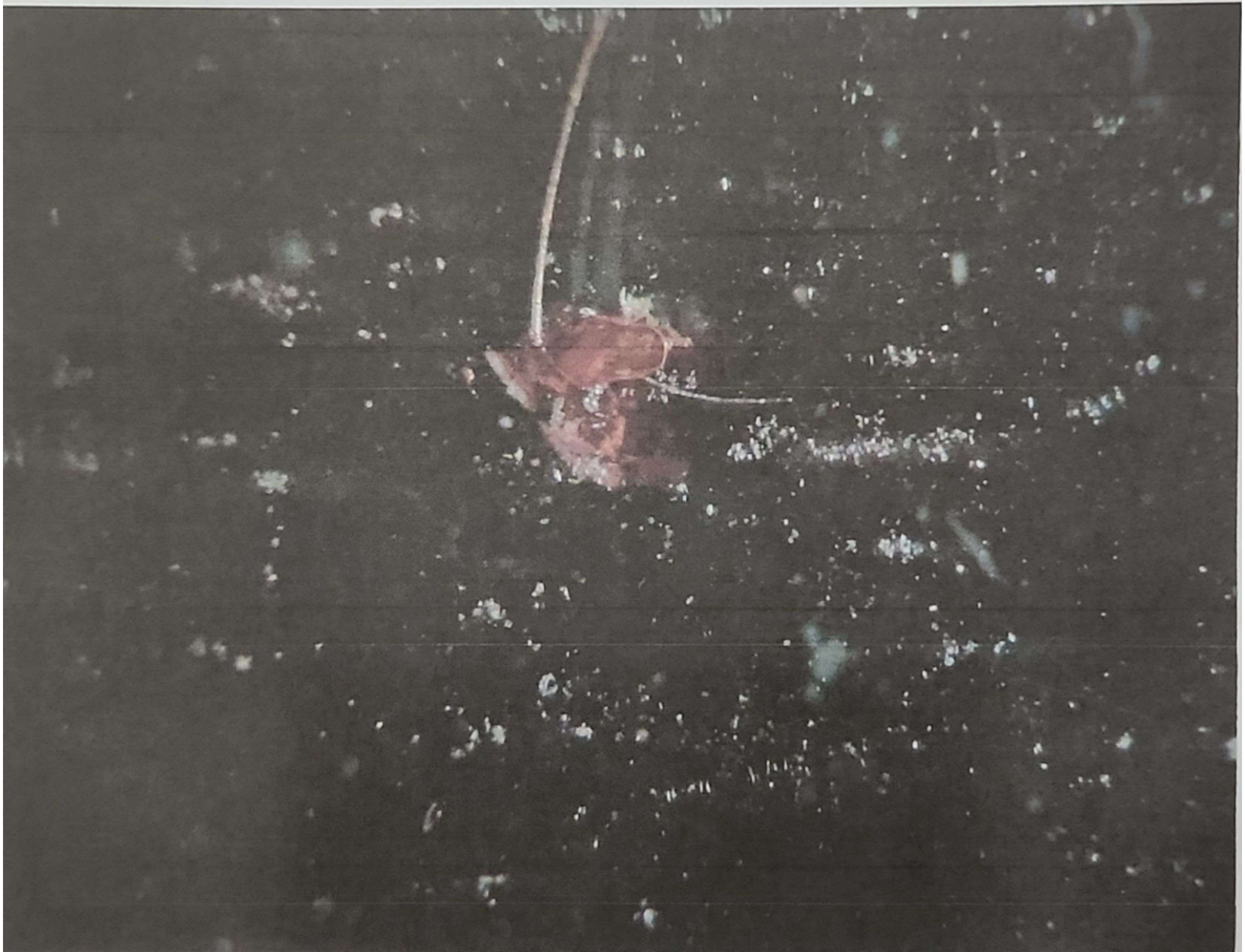
Side B, Magnification 13.4x and 80x
At the center of the specimen below the fiber tale/root and head you see a large center particle or spheroid of a light gray to white color. Being in the center of this type of specimen it may be a silicon CMOS piece part.

The next image at 80x magnification shows the fluorescent thin film coatings as well as the detailed integrated circuit micro array structures on the surface of the 3D specimen. Note the layers of triangles as well as triangular forked structures. The base may have been extruded in its manufacturing process. The upper head design shows the hook and claw edges that are used in waveguide designed piece parts as well as no scalloping of the "blade" areas surface (between the nano claws/hooks).

The third 80x magnification image shows the circuit coating at 7 o'clock but look at the specific nano tongue design of the red maroon structure. (See Zhang Wang article attached to this report.)

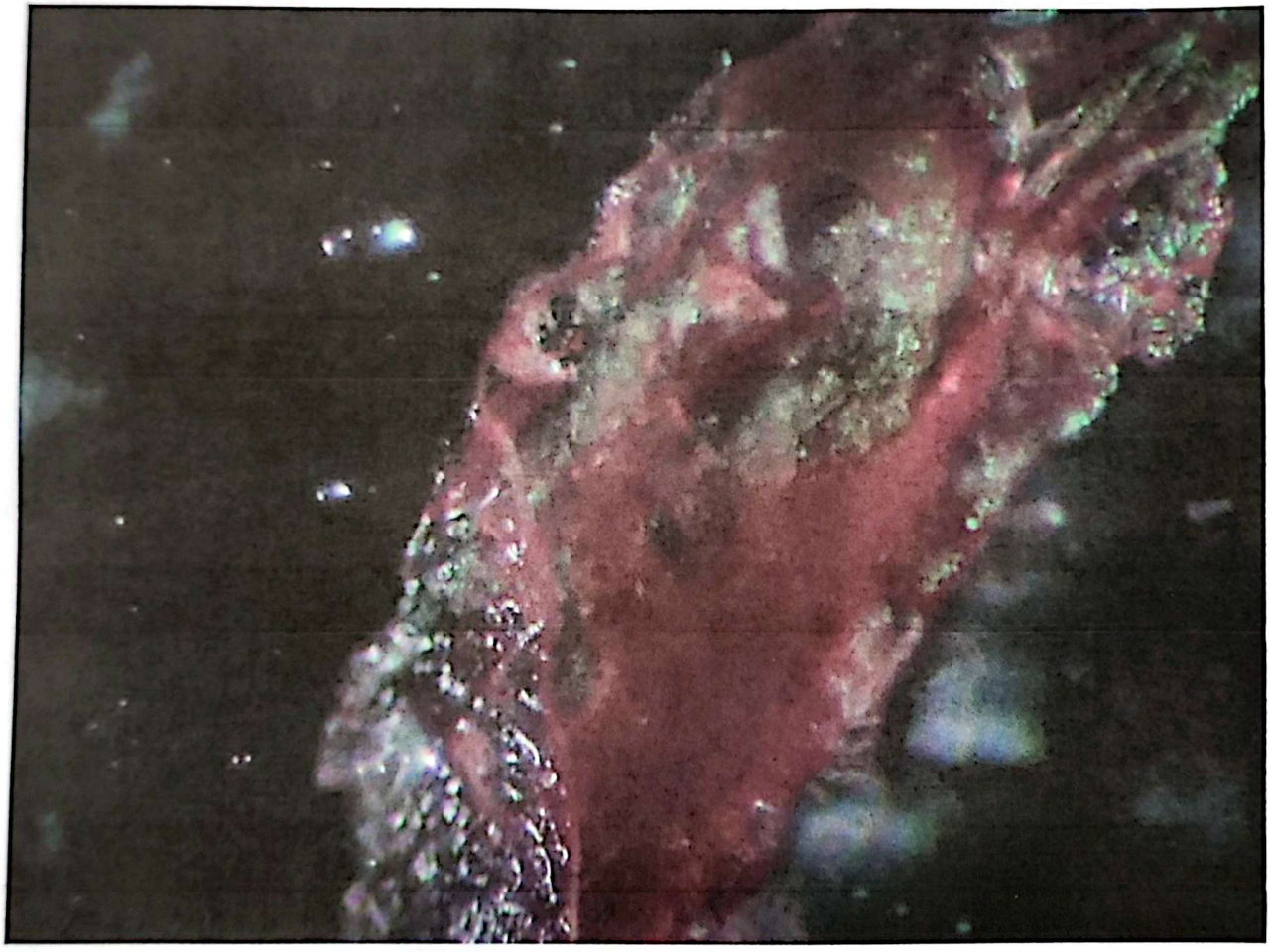
The lower tip of the 80x magnification in the last image of this series shows the thin film coating with fluorescent green dye as well integrated circuit micro arrays.

GENERAL NOTE: When reviewing the report on Phase II and III, it will be advantageous to review the images as the chemical analyses of each of the specimens collected are discussed. This will give the reader a better idea of the design of the advanced materials and its purpose. Again, look at the hand drawn images on the chain of custody document for the collection of these specimens, so one may have a reference point to the design features of the specimen(s).



[redacted]

Side B, Mag 80x



[redacted]

Side B, Mag 13.4x