



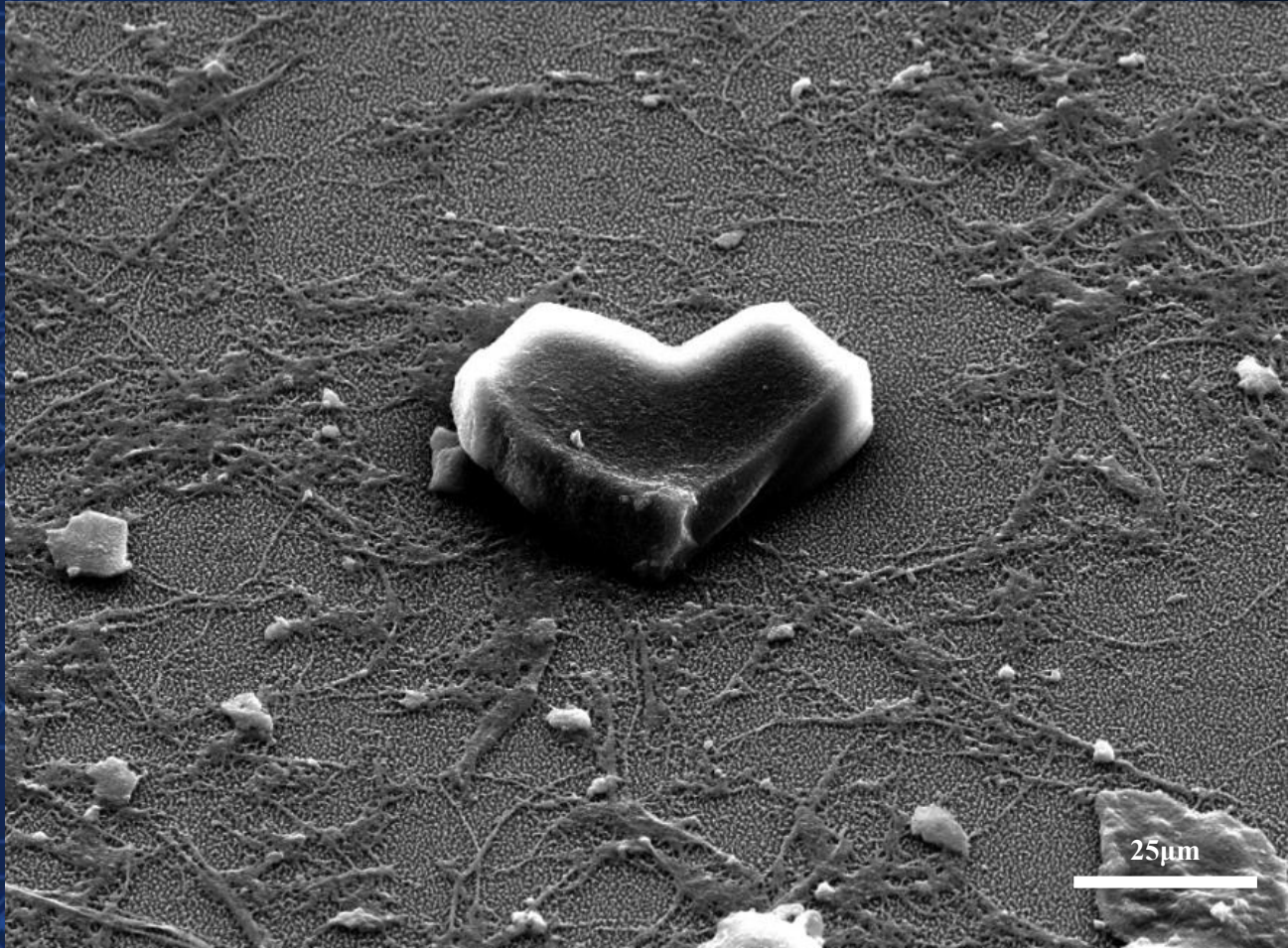
# 2021 EIPBN MicroGraph Contest

1

**Micrograph Title:**  
**LOVE FOR OUR WORLD**

**Description:**  
Occasionally scanning the sample, then found a piece of material naturally forming a "Heart" shape

**Orig. Mag (3"x4" image): 1.57 KX**  
**Instrument : MIRA3 TESCAN**  
**Submitted by: Xinye Chen**  
**Affiliation: Rochester Institute of Technology**



Sponsored by:





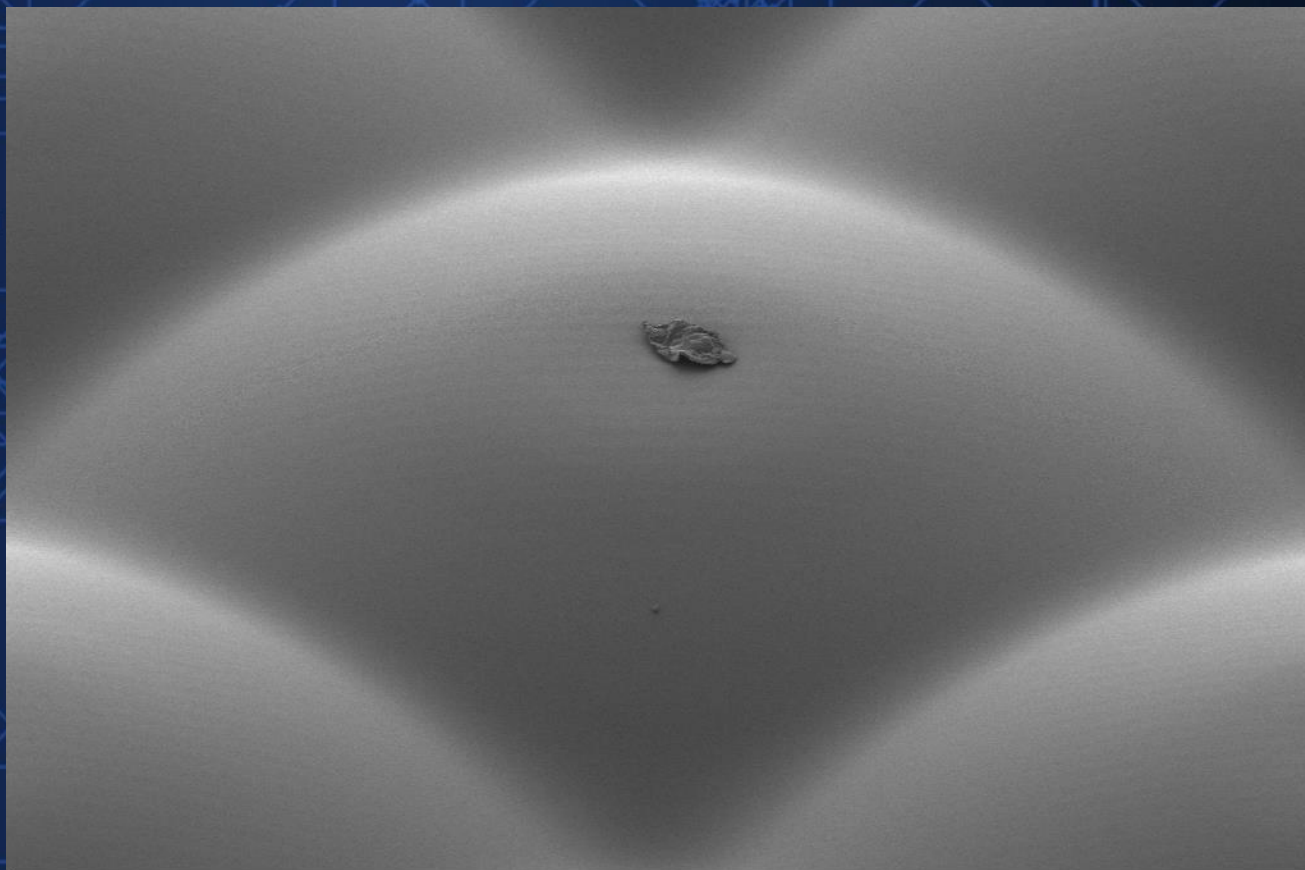
# 2021 EIPBN MicroGraph Contest

2

**Micrograph Title:**  
**The origin of the world?**

**Description:**  
**Particle on a convex lens array  
in photoresist made with  
maskless grayscale lithography.**

**Orig. Mag (3"x4"image): 169X**  
**Instrument : Zeiss Auriga SEM**  
**Submitted by: Dominique Collé**  
**Affiliation: Heidelberg**  
**Instruments**



Sponsored by:



100  $\mu\text{m}$

EHT = 3.00 kV

Detector = SE2

Image Width = 677.9  $\mu\text{m}$

WD = 8.6 mm

Mag = 169 X

Stage at T = 47.6 °

## Micrograph Title: **Newborn Silicon Nanowires**

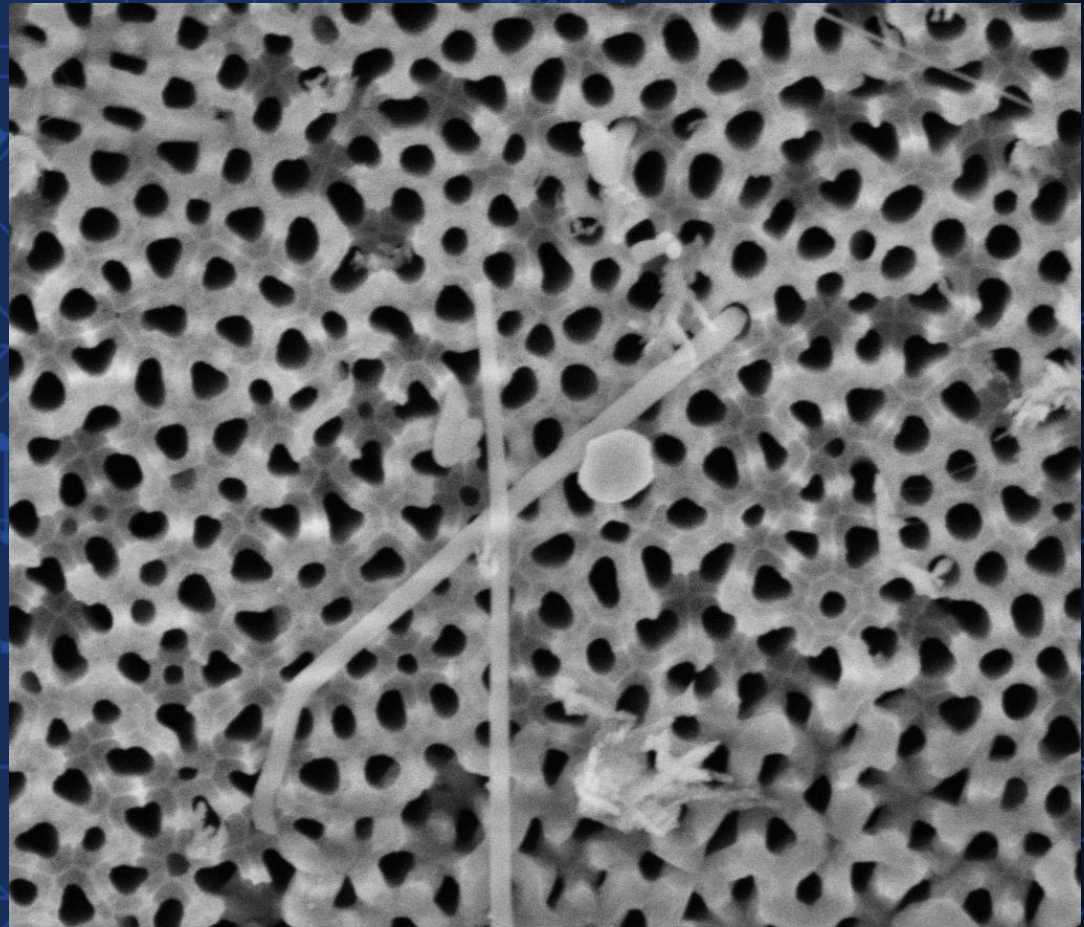
**Description:** Silicon nanowires nucleated and grown from the nanopores of an alumina template. This image depicts their birth, so we can watch their first moments leaving their cocoon. They grow up so fast!

**Instrument :** Thermo Fisher Scientific Quanta 650 FEG

**Submitted by:** Raul Back Campanelli

**Affiliation:** Institute of Physics "Gleb Wataghin".

**Acknowledgements:** Brazilian Nanotechnology National Laboratory (LNNano), FAPESP, CAPES, CNPq.



Sponsored by:



det	HV	spot	WD	HFWD	mag	1 μm
ETD	5.00 kV	2.0	0.0	5.15	20.00 kx	



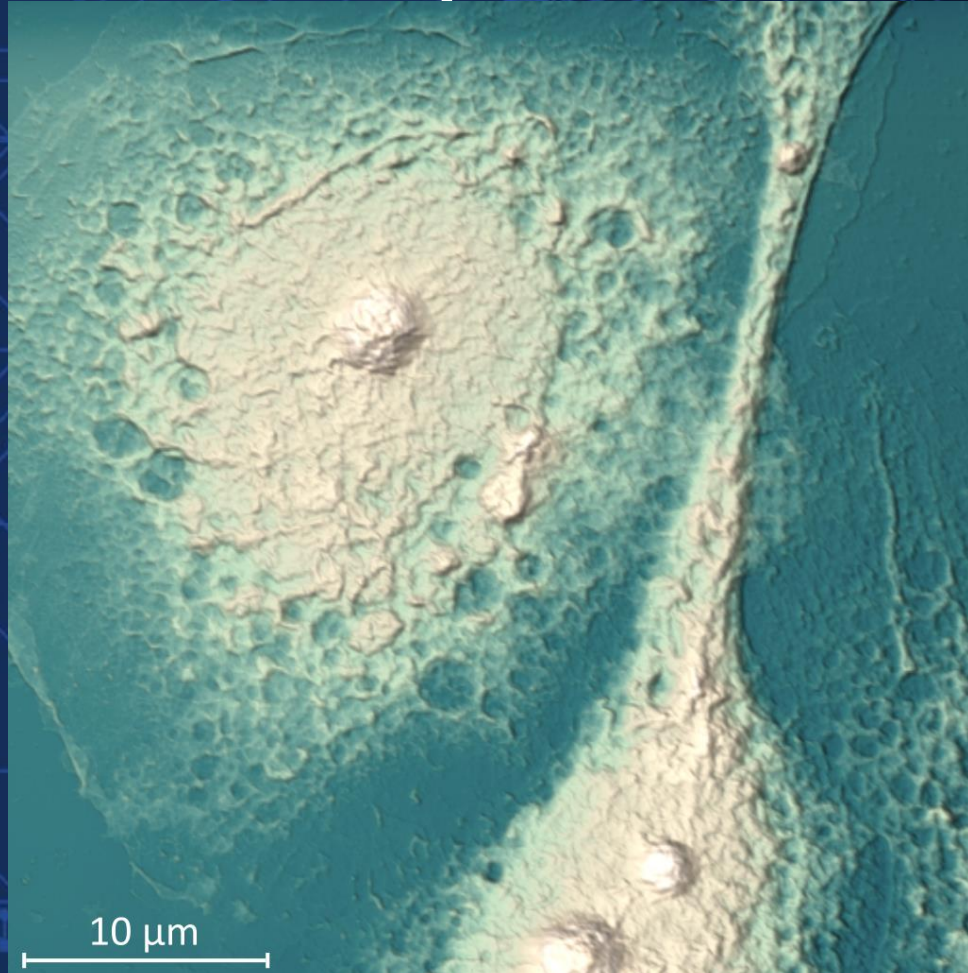
# 2021 EIPBN MicroGraph Contest

4

**Micrograph Title:**  
**Sea of life**

**Description:**

**AFM topography of a breast cancer cell with visible absorbed nanoparticles, resembling an island in the sea.**  
**With sample courtesy: Marco Cassani PhD, FNUSA Brno, Czech republic.**  
**Orig. Mag (3"x4" image): 40  $\mu\text{m}$**   
**Instrument : LiteScope**  
**Submitted by: Radek Dao**  
**Affiliation: NenoVision s.r.o.**



Sponsored by:





# 2021 EIPBN MicroGraph Contest

5

**Micrograph Title:**  
**Secret-admirer to a flower**

**Description:**

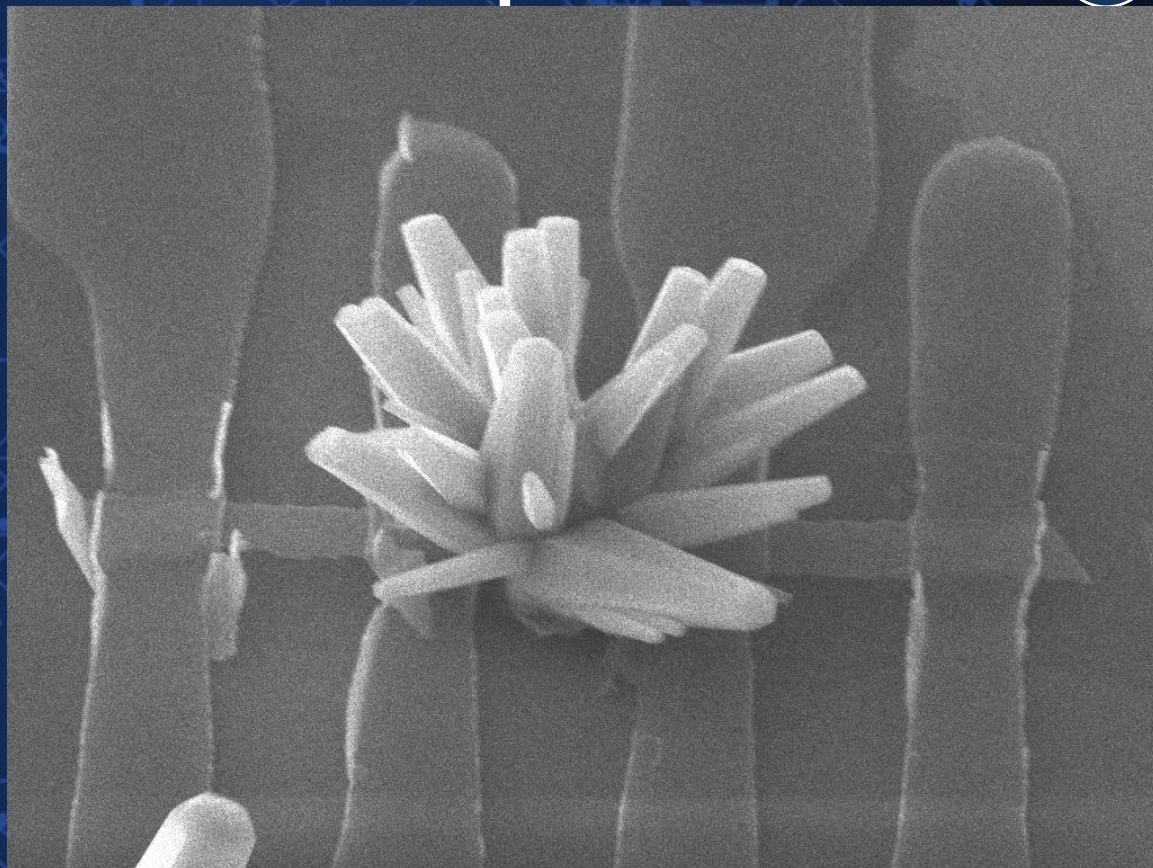
The flower is a cluster of ZnO nanorods on WSe<sub>2</sub> channel. There is a single ZnO rod on the lower left corner, which looks like a finger point to the flower.

Orig. Mag (3"x4"image): 9.30 KX

Instrument : VEGA3 TESCAN

Submitted by: Yulin Geng

Affiliation: Institute for Integrated  
Micro and Nano Systems, University  
of Edinburgh



SEM HV: 20.0 kV

WD: 15.02 mm

View field: 29.9  $\mu$ m

Det: SE

SEM MAG: 9.30 kx

Date(m/d/y): 03/12/21



5  $\mu$ m

VEGA3 TESCAN

Sponsored by:



IMNS Edinburgh University



# 2021 EIPBN MicroGraph Contest

6

## Micrograph Title:

**Meteor Shower**

## Description:

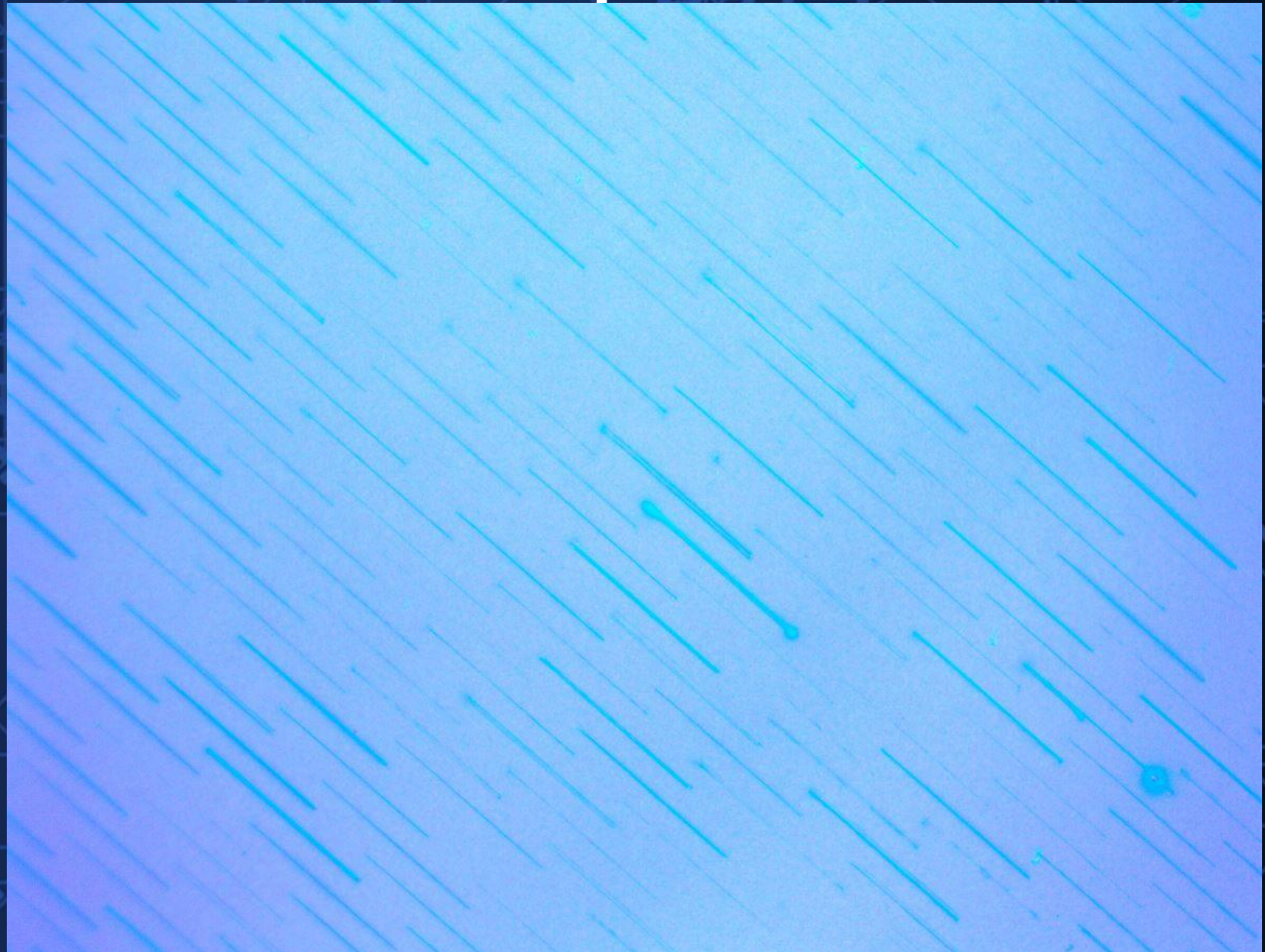
**MoS<sub>2</sub> patterns are site-selectively grown on the substrate. Different thickness of MoS<sub>2</sub> stripes shows different darkness of color. The width of each stripe is 10 $\mu$ m.**

**Orig. Mag (3"x4"image): 10X**

**Instrument : Nikon Eclipse LV150**

**Submitted by: Mingze Chen**

**Affiliation: University of Michigan**



Sponsored by:





# 2021 EIPBN MicroGraph Contest

7

## Micrograph Title: **Crystalized squares**

### Description:

This is a differential contrast micrograph of a Polyethylene terephthalate (PETE) imprinted with fiber-threaded rubber padding.

Orig. Mag (3"x4"image): **100x**

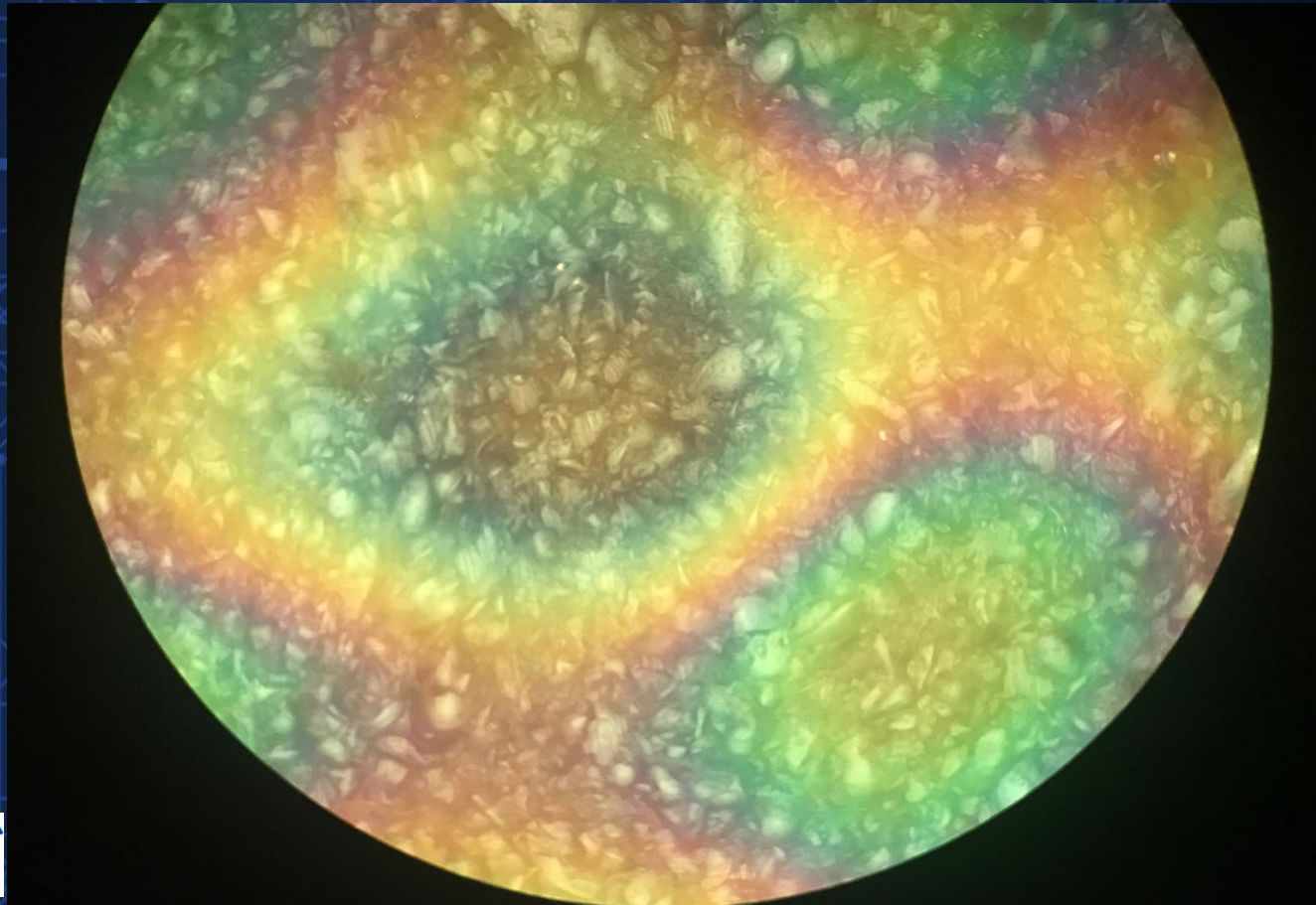
Instrument : **Olympus BX60**

Submitted by: **Blessing**

**Adewumi**

Affiliation: **Louisiana State University, Baton Rouge, USA.**

Sponsored by:





# 2021 EIPBN MicroGraph Contest

8

**Micrograph Title:**  
**Multicolored polygons**

**Description:**

This is a differential contrast micrograph of a Polyethylene terephthalate (PETE) imprinted with fiber-threaded rubber padding.

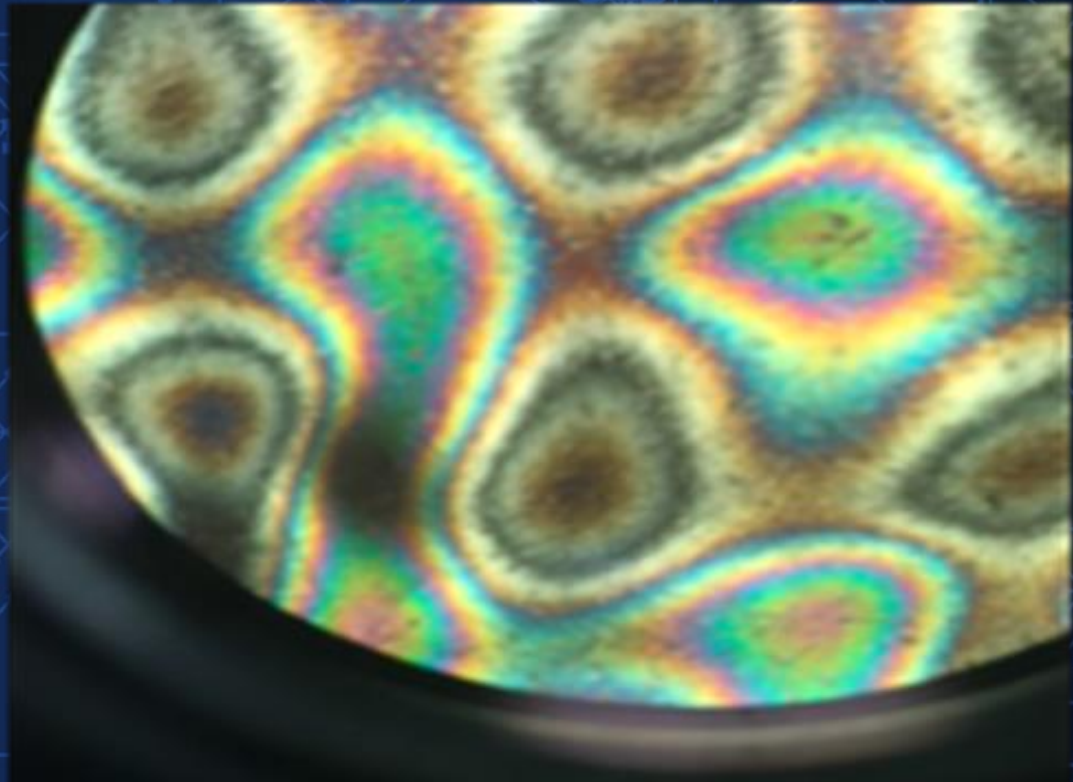
Orig. Mag (3"x4" image): 50x

Instrument : Olympus BX60

Submitted by: Blessing

Adewumi

Affiliation: Louisiana State University, Baton Rouge, USA.



Sponsored by:







# 2021 EIPBN MicroGraph Contest

9

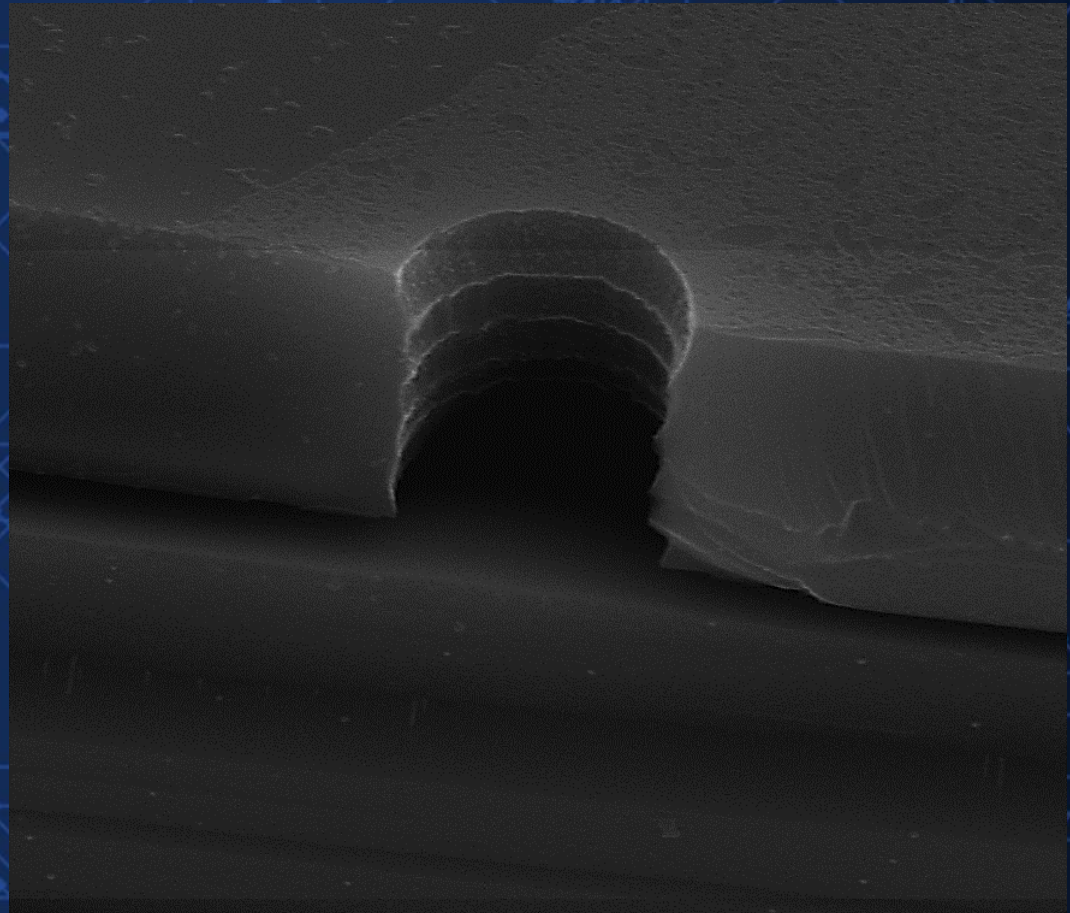
**Micrograph Title:**  
**Silicon Cheesecake**

**Description:**  
**Fabrication of Micro nozzle on a SOI wafer for Micro CVD.**

**Orig. Mag (3"x4"image): 10 KX**  
**Instrument : FIB FEI Nova 600**  
**NanoLab**  
**Submitted by: Pavani Vamsi**  
**Krishna Nittala**

**Affiliation: Argonne National Laboratory**  
**& The University of Chicago**

**Sponsored by:**



tilt	HV	WD	mag	det	mode	HFW	5 μm
52 °	20.00 kV	5.0 mm	10,001 x	ETD	SE	12.8 μm	



# 2021 EIPBN MicroGraph Contest

10

**Micrograph Title:**  
**Silicon Pillars**

**Description:**

These 1  $\mu\text{m}$  sized pillars fabricated using BOSCH are used to crush the biological cells

Orig. Mag (3"x4"image): 6.5 KX

Instrument : FIB FEI Nova 600

NanoLab

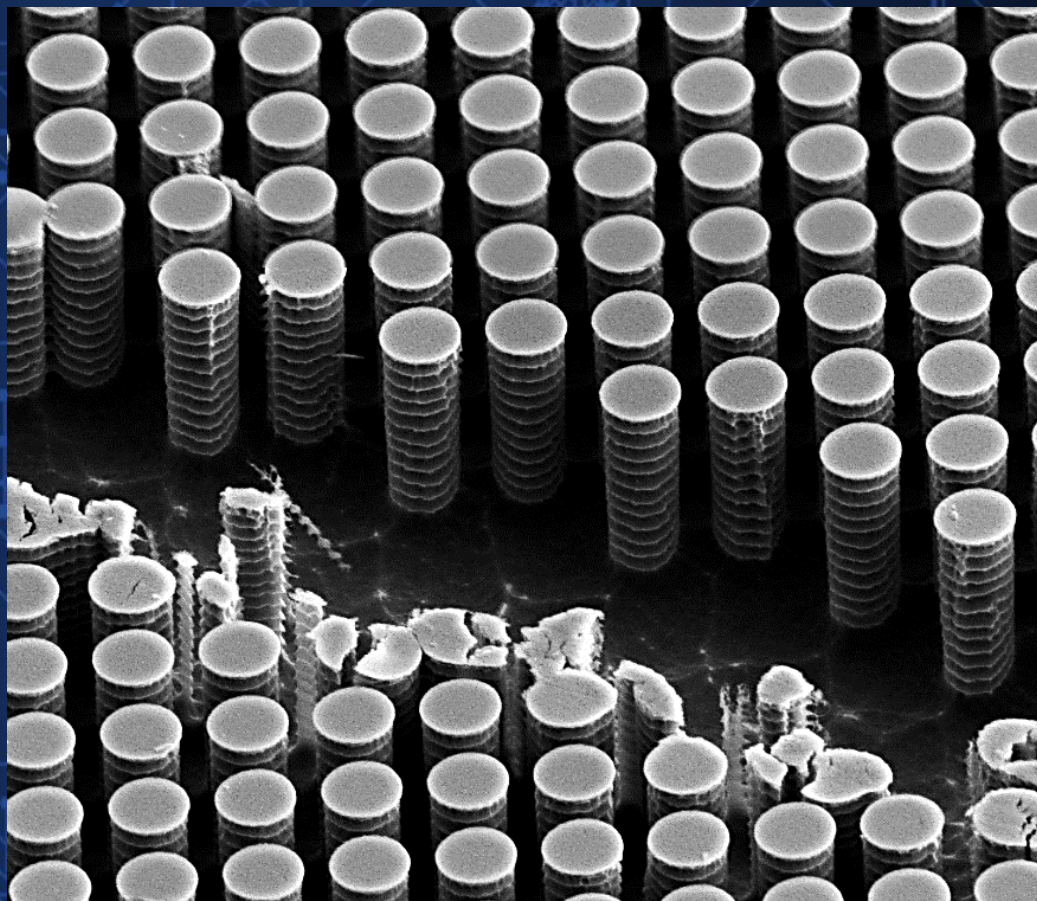
Submitted by: Pavani Vamsi

Krishna Nittala

Affiliation: Argonne National Laboratory

& The University of Chicago

Sponsored by:



	tilt	HV	WD	mag	det	mode	HFW	5 $\mu\text{m}$	
	45 °	5.00 kV	4.0 mm	6 502 x	ETD	SE	19.7 $\mu\text{m}$		



# 2021 EIPBN MicroGraph Contest

11

**Micrograph Title:**  
**Micro Graduation**

**Description:**

These 1  $\mu\text{m}$  sized structures are fabricated using cryo etch and will be used to puncture the biological cell wall.

Orig. Mag (3"x4"image): 6.6 KX

Instrument : FIB FEI Nova 600

NanoLab

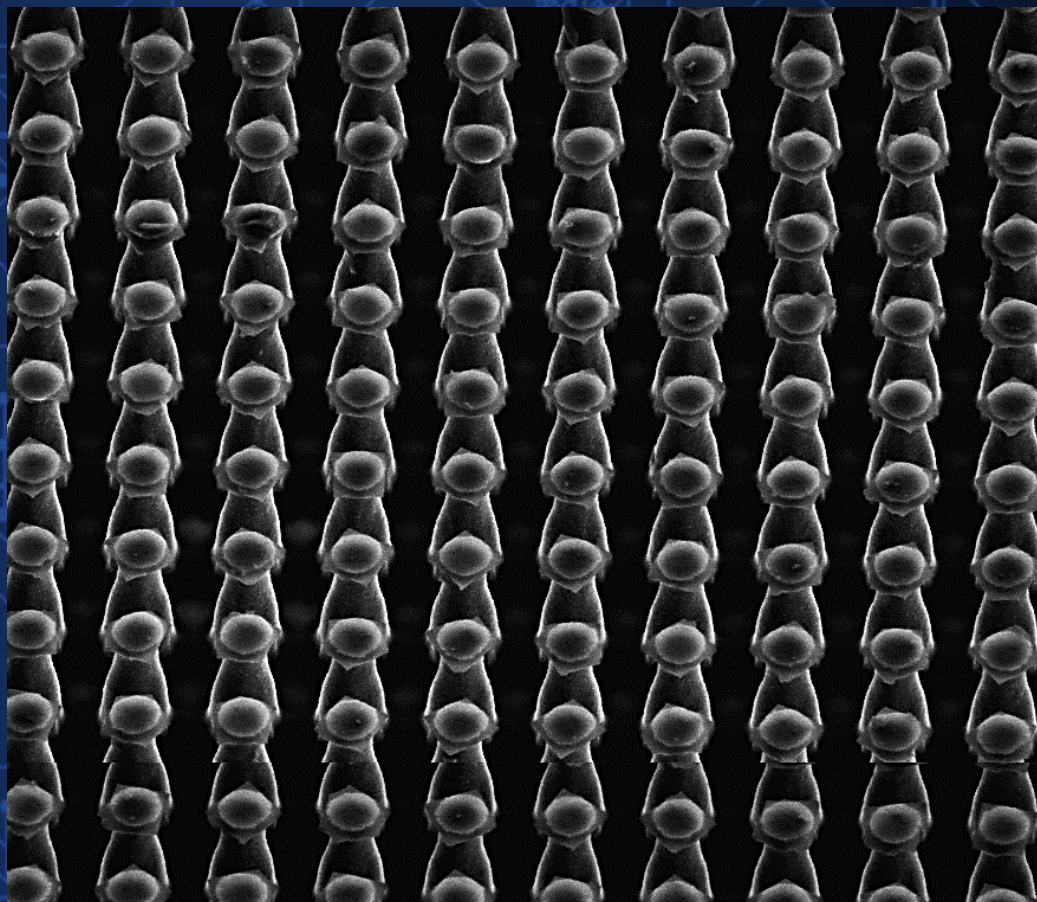
Submitted by: Pavani Vamsi

Krishna Nittala

Affiliation: Argonne National Laboratory

& The University of Chicago

Sponsored by:



tilt	HV	WD	mag	det	mode	HF	FW	5 $\mu\text{m}$
45 °	5.00 kV	4.2 mm	6 613 x	ETD	SE	19.4 $\mu\text{m}$		



# 2021 EIPBN MicroGraph Contest

12

**Micrograph Title:**

**Life in 2020**

**Description:**

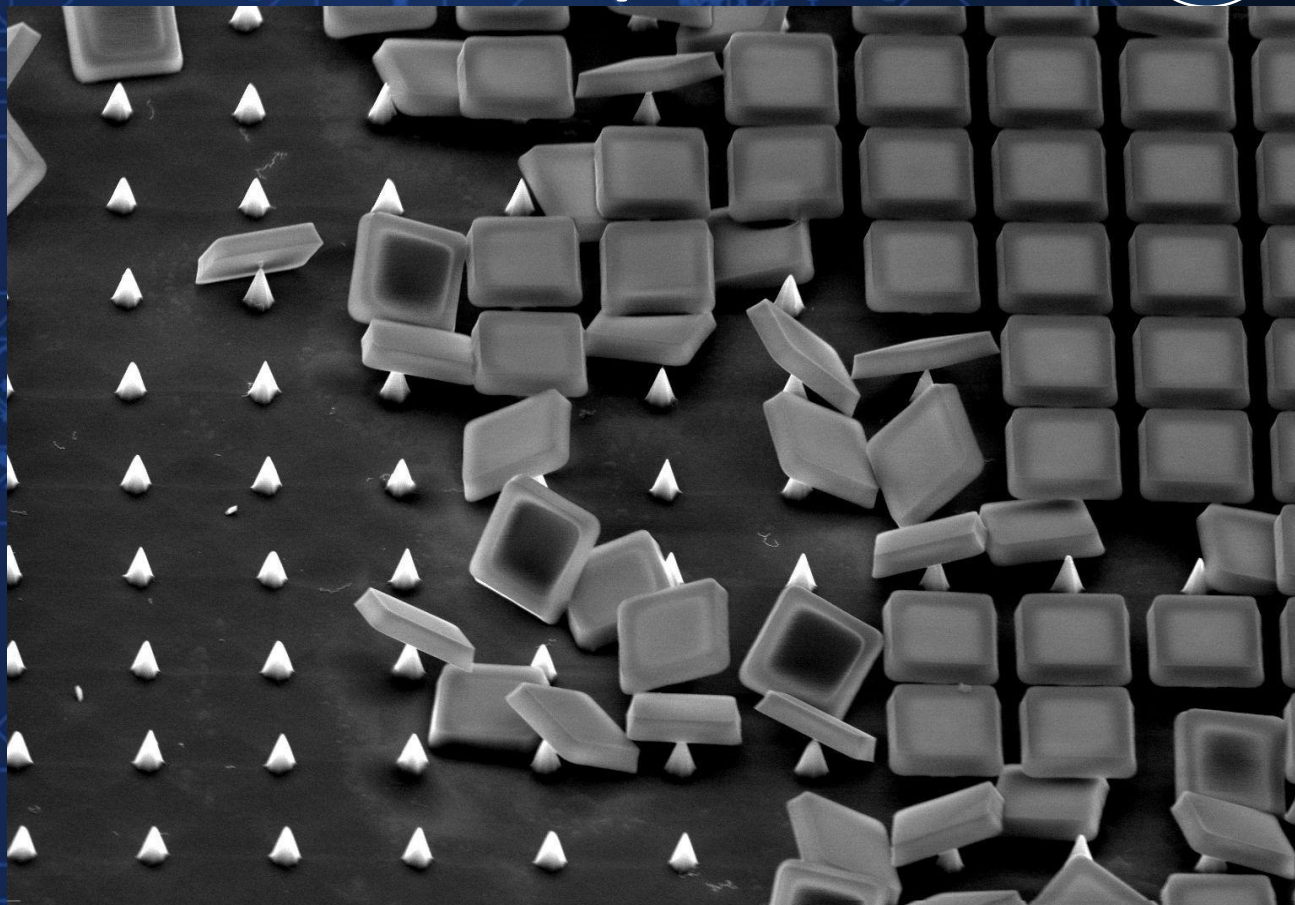
**These KOH based sharp silicon tips will be used to puncture the biological cell wall.**

**Orig. Mag (3"x4"image): 3.5 KX**

**Instrument : SEM FEI Quanta 650**

**Submitted by: Pavani Vamsi  
Krishna Nittala**

**Affiliation: Argonne National Laboratory  
& The University of Chicago**



Sponsored by:



	7/24/2020 10:46:30 AM	HV 10.00 kV	spot 3.5	WD 8.7 mm	mag  3 555 x	dwell 10 $\mu$ s	 20 $\mu$ m
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# 2021 EIPBN MicroGraph Contest

13

**Micrograph Title:**  
**The Nano-code**

**Description:**

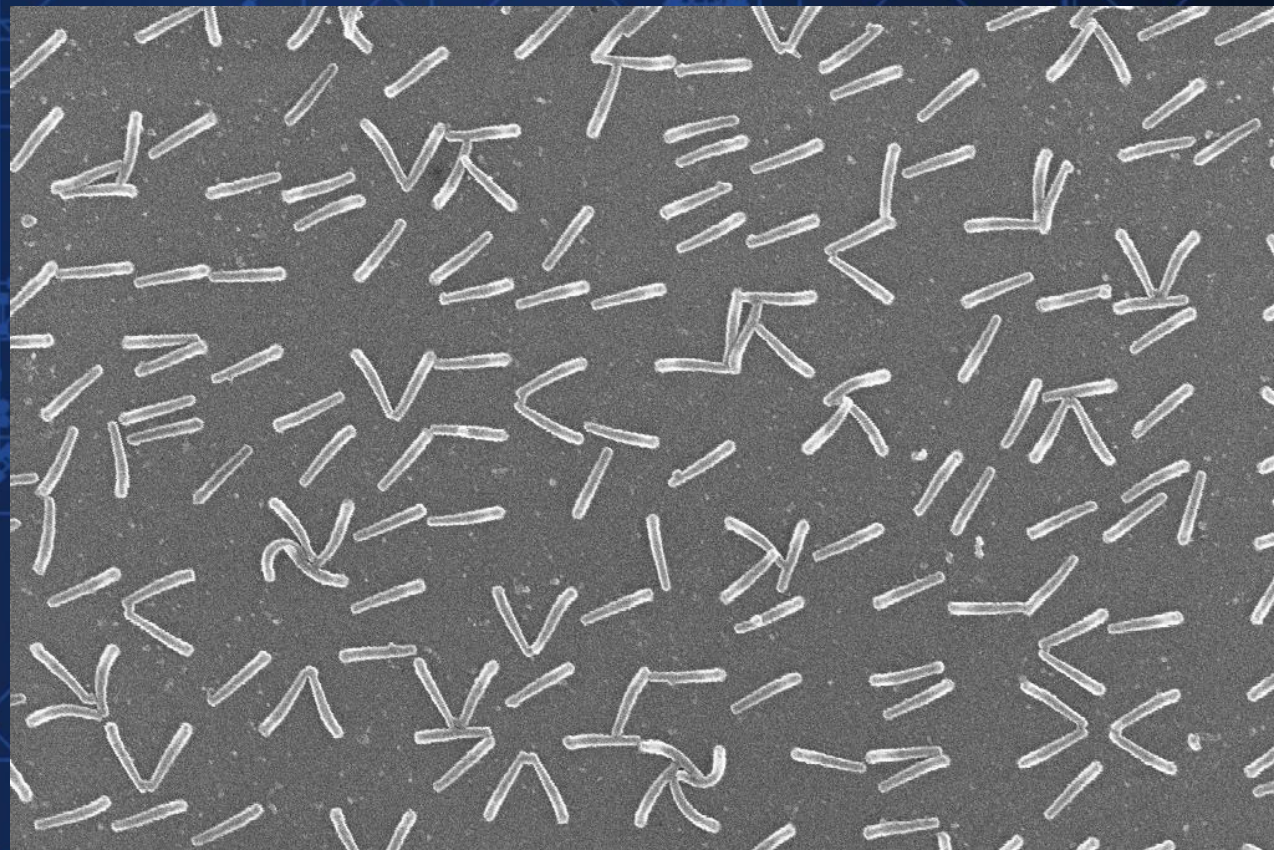
Lattice of PMMA pillars fabricated with EBL. Pillars have fallen over during exposure to solvents and have then been coated with 60 nm of Au.

Orig. Mag (3"x4"image): 23.66kX

Instrument : Raith 150

Submitted by: Aran Warren

Affiliation: University of  
Canterbury



Raith 150

200nm

EHT = 10.00 kV

Signal A = InLens

Date :8 Jun 2020

Mag = 23.66 K X



WD = 6 mm

User Name = ANW41

Time :13:19:14

Sponsored by:



## Micrograph Title:

**Pool Noodles**

## Description:

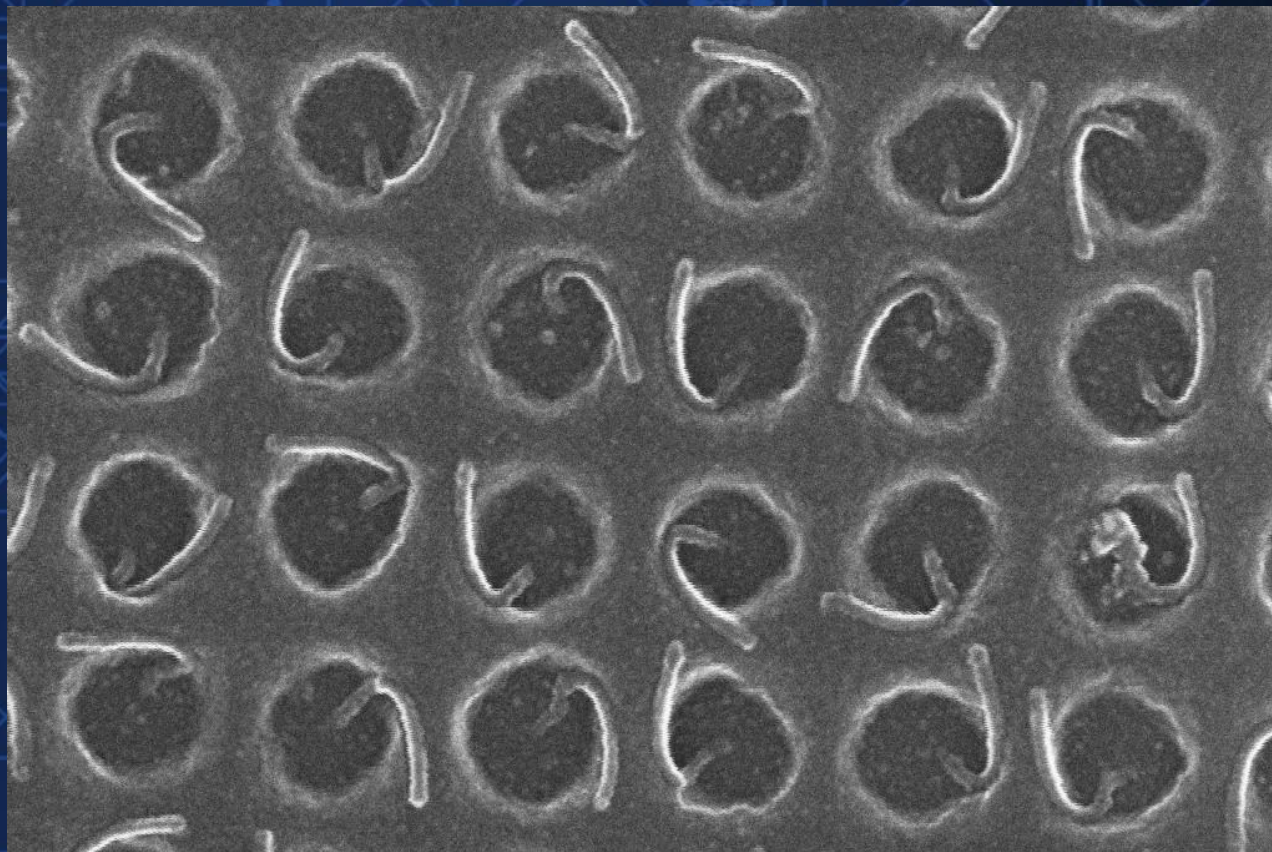
**PMMA coated with Au. Over exposed nanodot lattice using expired conductive polymer during EBL.**

**Orig. Mag (3"x4"image): 62kX**

**Instrument : Raith 150**

**Submitted by: Aran Warren**

**Affiliation: University of  
Canterbury**



Sponsored by:



Raith 150  
Mag = 62.00 K X

200nm  
|-----|

EHT = 10.00 kV  
WD = 6 mm

Signal A = InLens  
User Name = ANW41

Date :8 Jun 2020  
Time :13:43:05



# 2021 EIPBN MicroGraph Contest

15

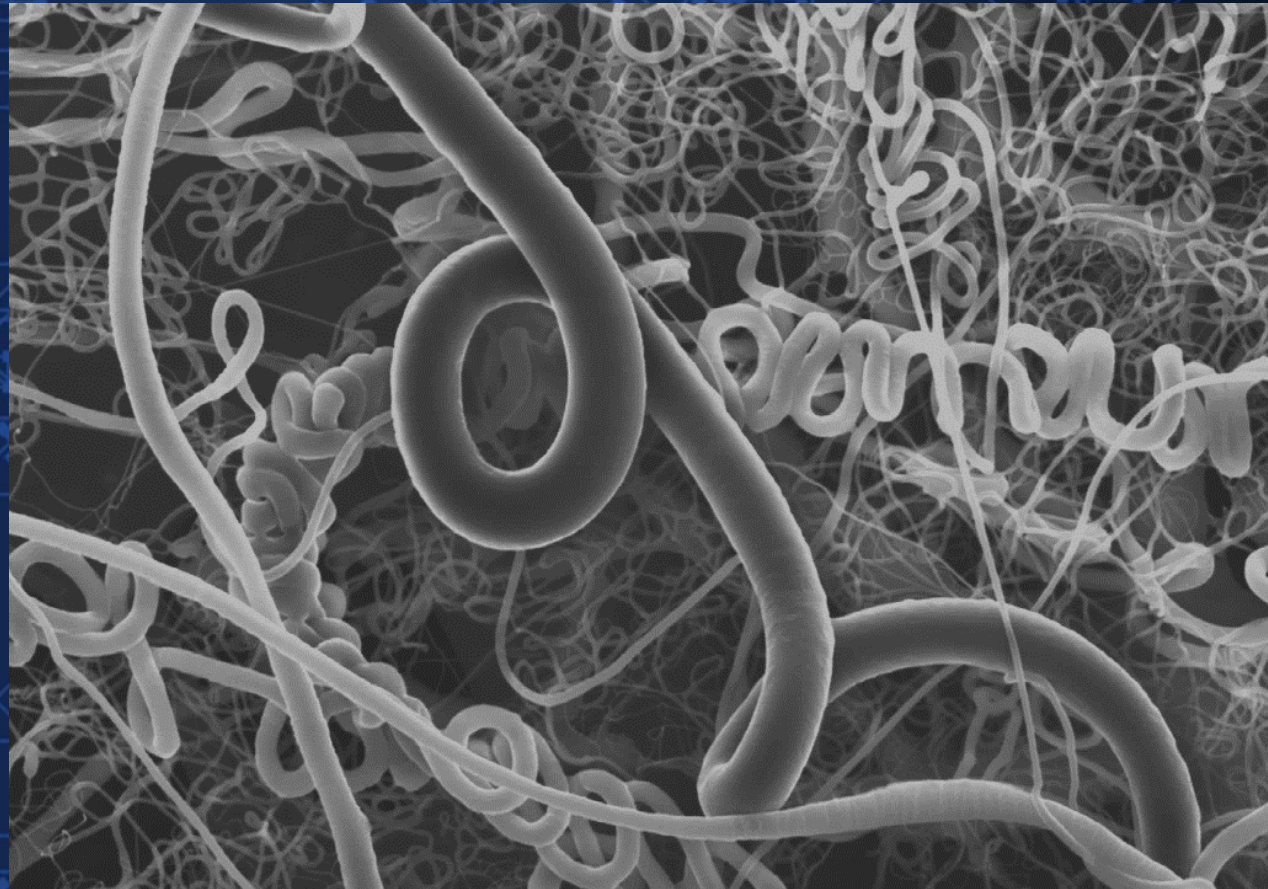
**Micrograph Title:**  
**Dr. Seuss Coloring Book**

**Description:**  
**He painted this one with polymers.**

**Orig. Mag (3"x4"image): 500 X**  
**Instrument : Hitachi S-4500 SEM**  
**Submitted by: Jessica M. Andriolo**

**Affiliation: Montana Tech  
Nanotechnology Laboratory**

Sponsored by:



MTNL 20.0kV X500 60.0µm



# 2021 EIPBN MicroGraph Contest

16

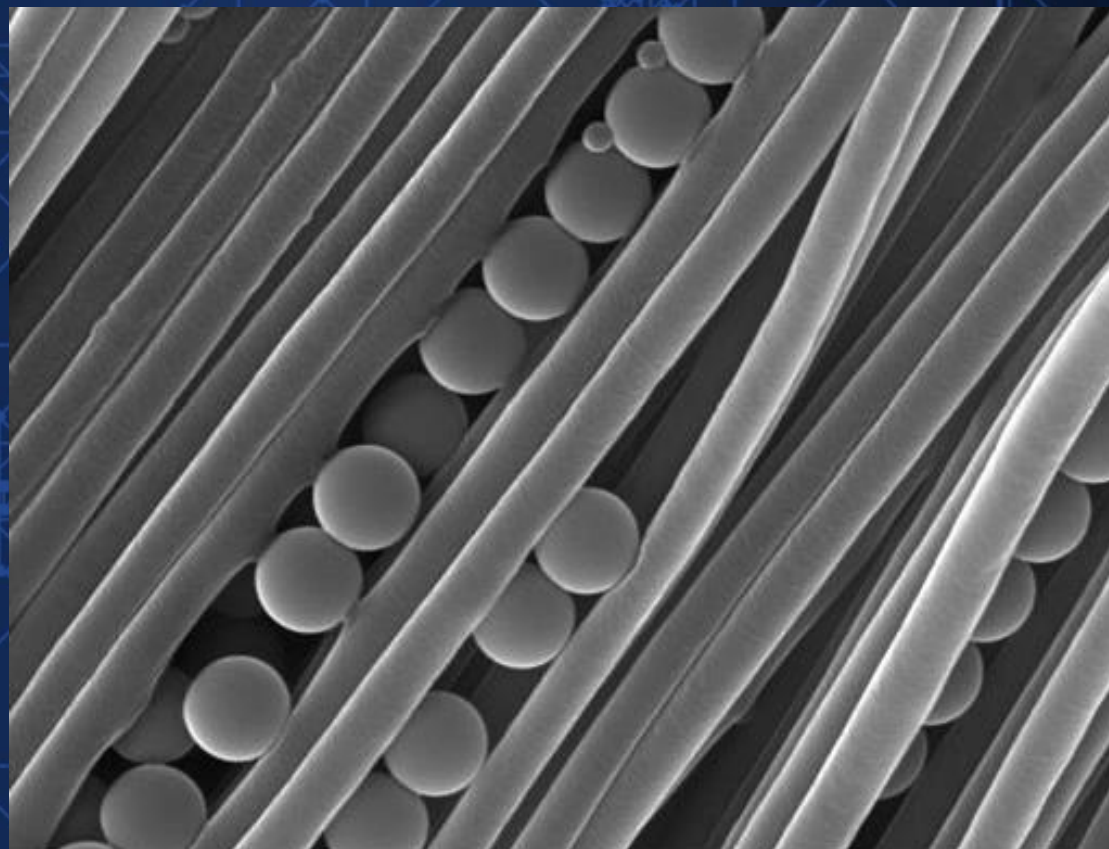
**Micrograph Title:**  
**Where's Mickey**

**Description:**  
**Can you find him?**

**Orig. Mag (3"x4"image): 12.1 KX**  
**Instrument : Tescan Mira 3**  
**FESEM**  
**Submitted by: Jessica M.**  
**Andriolo**

**Affiliation: Montana Tech**  
**Nanotechnology Laboratory**

**Sponsored by:**



SEM HV: 20.0 kV	WD: 24.66 mm		MIRA3 TESCAN
View field: 11.5 µm	Det: SE		2 µm
SEM MAG: 12.1 kx	Date(m/d/y): 06/02/20		





# 2021 EIPBN MicroGraph Contest

17

**Micrograph Title:**

**Koala**

**Description:**

**Hanging on to the polymer tree.**

**Orig. Mag (3"x4"image): 40 KX**

**Instrument : Hitachi S-4500 SEM**

**Submitted by: Jessica M.**

**Andriolo**

**Affiliation: Montana Tech**

**Nanotechnology Laboratory**

Sponsored by:

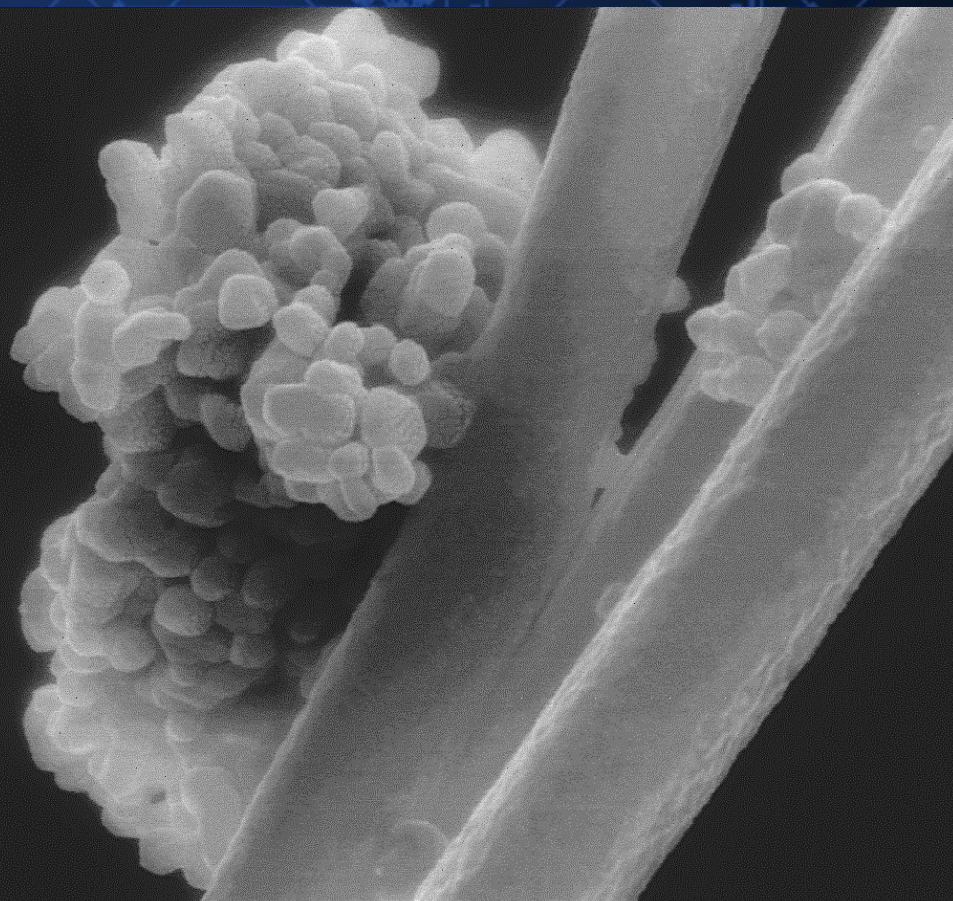


MTNL

7.0 kV

X40.0K

750nm





# 2021 EIPBN MicroGraph Contest

18

**Micrograph Title:**  
**Caught Those Dirty Bugs**

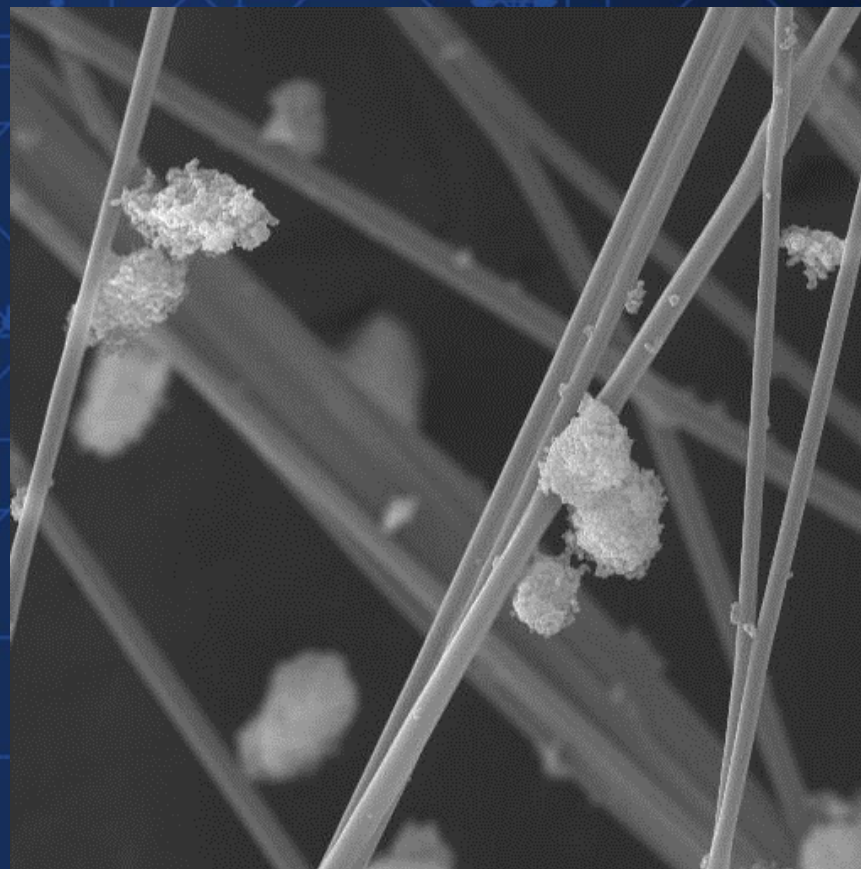
**Description:**  
**Electrospun Anti-Bio-Warfare-  
Threat Filtration System**

**Orig. Mag (3"x4"image): 6.66 KX**  
**Instrument : Tescan Mira 3**

**FESEM**  
**Submitted by: Jessica M.**

**Andriolo**  
**Affiliation: Montana Tech**

**Nanotechnology Laboratory**  
**Sponsored by:**



SEM HV: 20.0 kV	WD: 5.48 mm	MIRA3 TESCAN
View field: 20.8 µm	Det: SE	5 µm
SEM MAG: 6.66 kx	Date(m/d/y): 01/23/20	



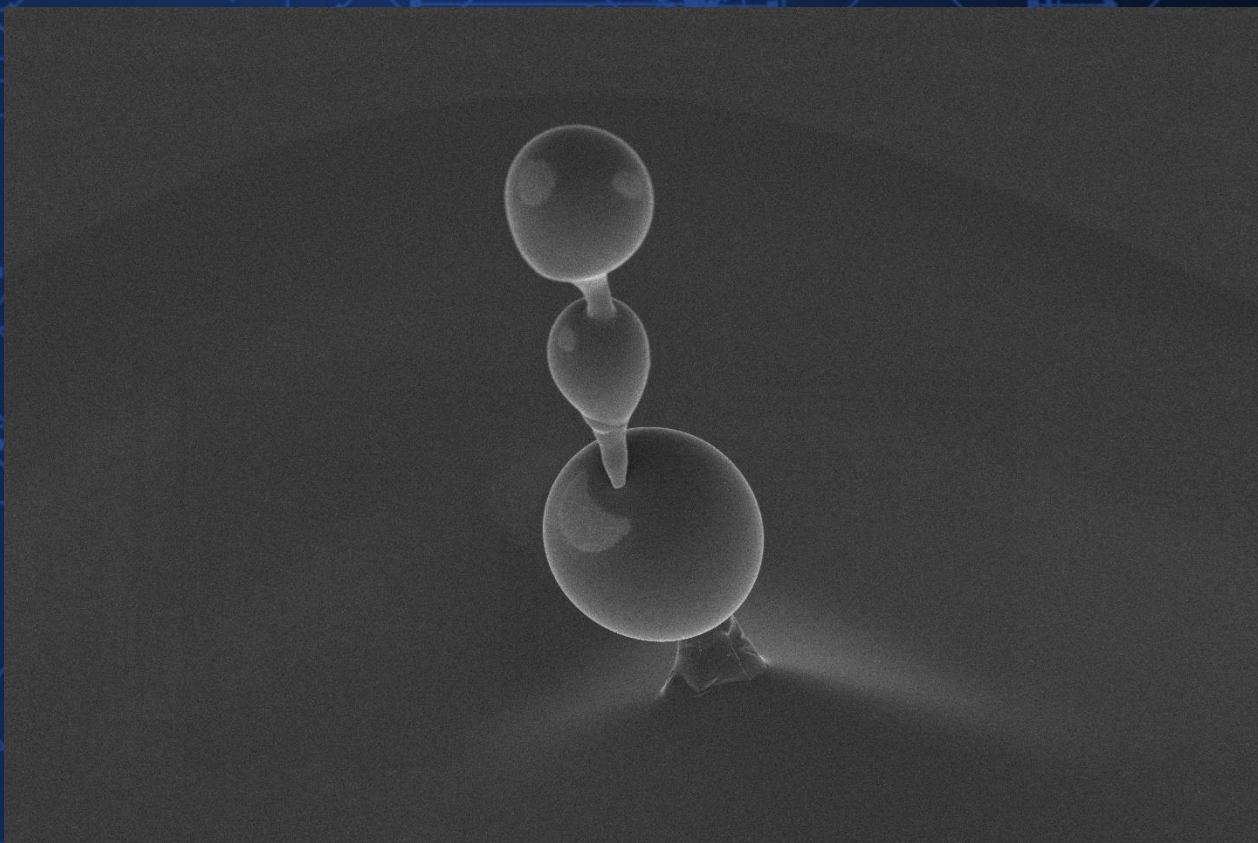
# 2021 EIPBN MicroGraph Contest

19

**Micrograph Title:**  
**A snowman's chance in...**

**Description:**  
We put a freshly RCA'd SOI wafer into an RTA @ 1200°C to grow 50 nm of oxide. This (and others like it) were sticking off the back side surface of the handle wafer after. We have stopped putting SOIs into the RTA...

**Orig. Mag (3"x4"image): 650x**  
**Instrument : FEI Apreo**  
**Submitted by: Mark McLean and William Osborn**  
**Affiliation: NIST**



	HV	↑ use case	det mode	HFW	WD	curr	mag <sup>Ⓜ</sup> x: -10.8569 mm	----- 50 μm -----
	5.00 kV	OptiPlan	T2 A+B	195 μm	17.5 mm	0.20 nA	650 x y: -17.9205 mm	

Sponsored by:





# 2021 EIPBN MicroGraph Contest

20

**Micrograph Title:**  
**Anarchy Zone**

**Description:**

**Cross Hatch PCL nanofibers obtained via multi-electrode electrospinning. The fibres create a unique scene passing over each other. Rotated 180°**

**Orig. Mag (3"x4"image): 5.82KX**

**Instrument : TESCAN MIRA 3**

**Submitted by:**

**Affiliation: Montana**

**Technological University- MTNL**



Sponsored by:





# 2021 EIPBN MicroGraph Contest

21

**Micrograph Title:**

**Lunar Roving**

**Description:**

**Cross Hatch PCL nanofibers  
obtained via multi-electrode  
electrospinning.**

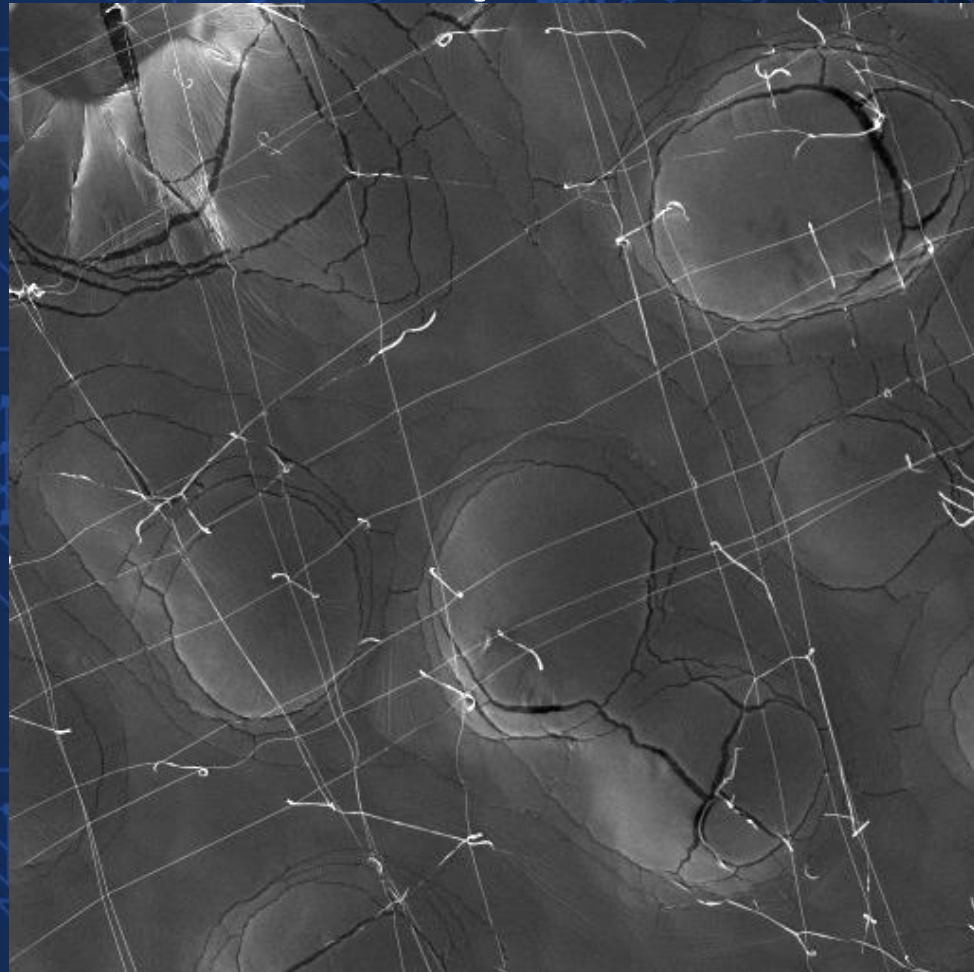
**Orig. Mag (3"x4"image): 193X**

**Instrument : TESCAN MIRA 3**

**Submitted by:**

**Affiliation: Montana**

**Technological University- MTNL**



Sponsored by:





# 2021 EIPBN MicroGraph Contest

22

**Micrograph Title:**  
**Through Silicon Via**

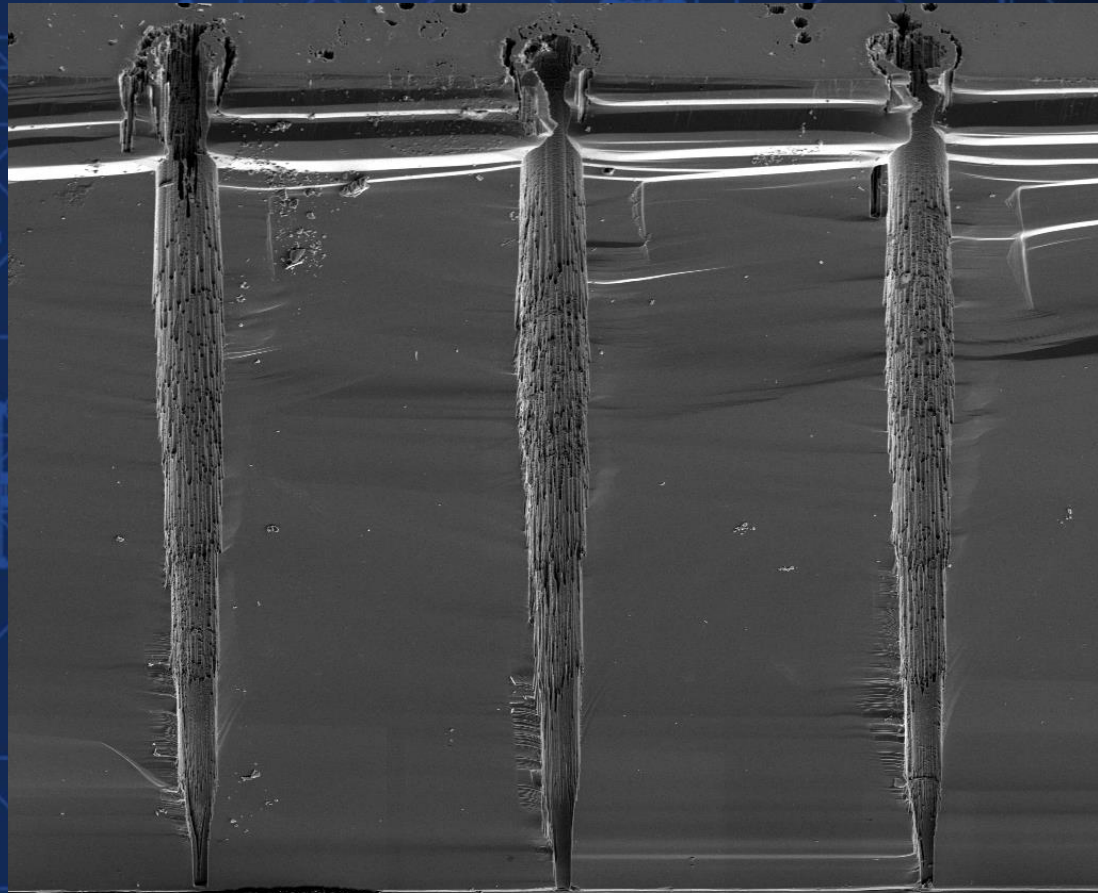
**Description:**  
**Fabrication of 10  $\mu\text{m}$  Via to a depth of 400  $\mu\text{m}$  using DRIE.**

**Orig. Mag (3"x4"image): 0.35 KX**  
**Instrument : FIB FEI Nova 600**  
**NanoLab**

**Submitted by: Pavani Vamsi**  
**Krishna Nittala**

**Affiliation: Argonne National Laboratory**  
**& The University of Chicago**

**Sponsored by:**





# 2021 EIPBN MicroGraph Contest

23

## Micrograph Title: Through Silicon Via

### Description:

Fabrication of 10  $\mu\text{m}$  Via to a depth of 400  $\mu\text{m}$  using DRIE, landed on the BOX of a SOI wafer.

Orig. Mag (3"x4"image): 2.5 KX

Instrument : FIB FEI Nova 600

NanoLab

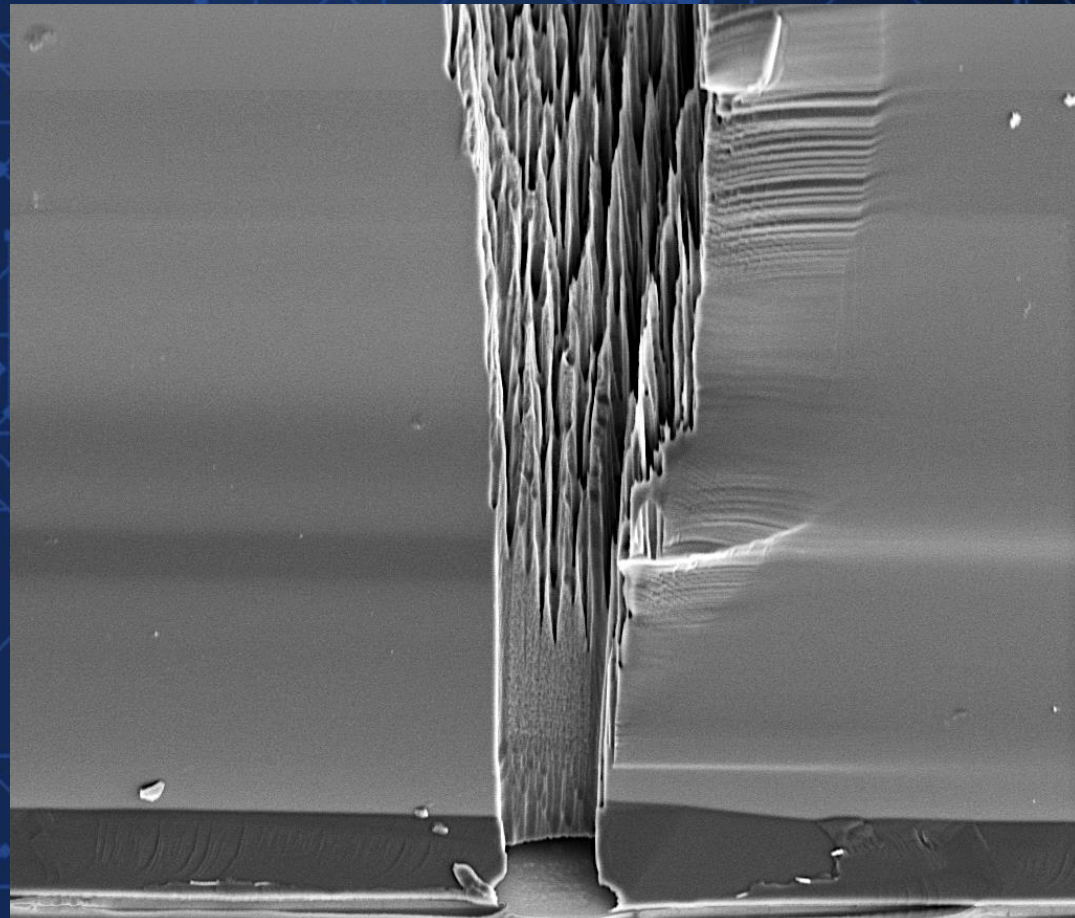
Submitted by: Pavani Vamsi

Krishna Nittala

Affiliation: Argonne National Laboratory

& The University of Chicago

Sponsored by:





# 2021 EIPBN MicroGraph Contest

24

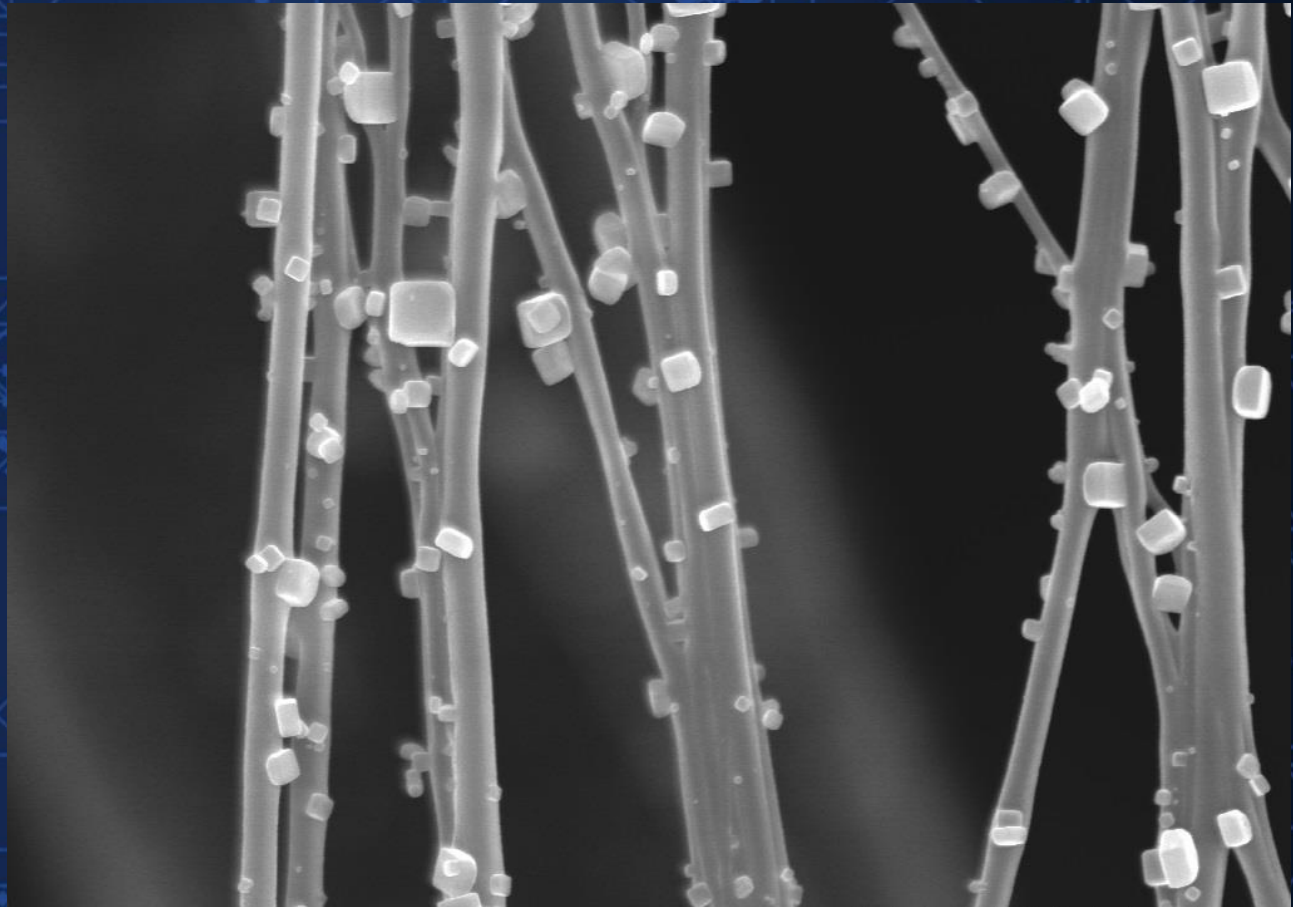
**Micrograph Title:**  
**Salty Trunks**

**Description:**  
**NaCl crystals on aligned electrospun PCL trunks.**

**Orig. Mag (3"x4"image): 2.5KX**  
**Instrument : Hitachi S4500 Field Emission SEM**

**Submitted by: Luke J. Suttley**  
**Affiliation: Montana Tech Nanotechnology Laboratory**

Sponsored by:



MTNL 20.0kV X2.50K 12.0µm





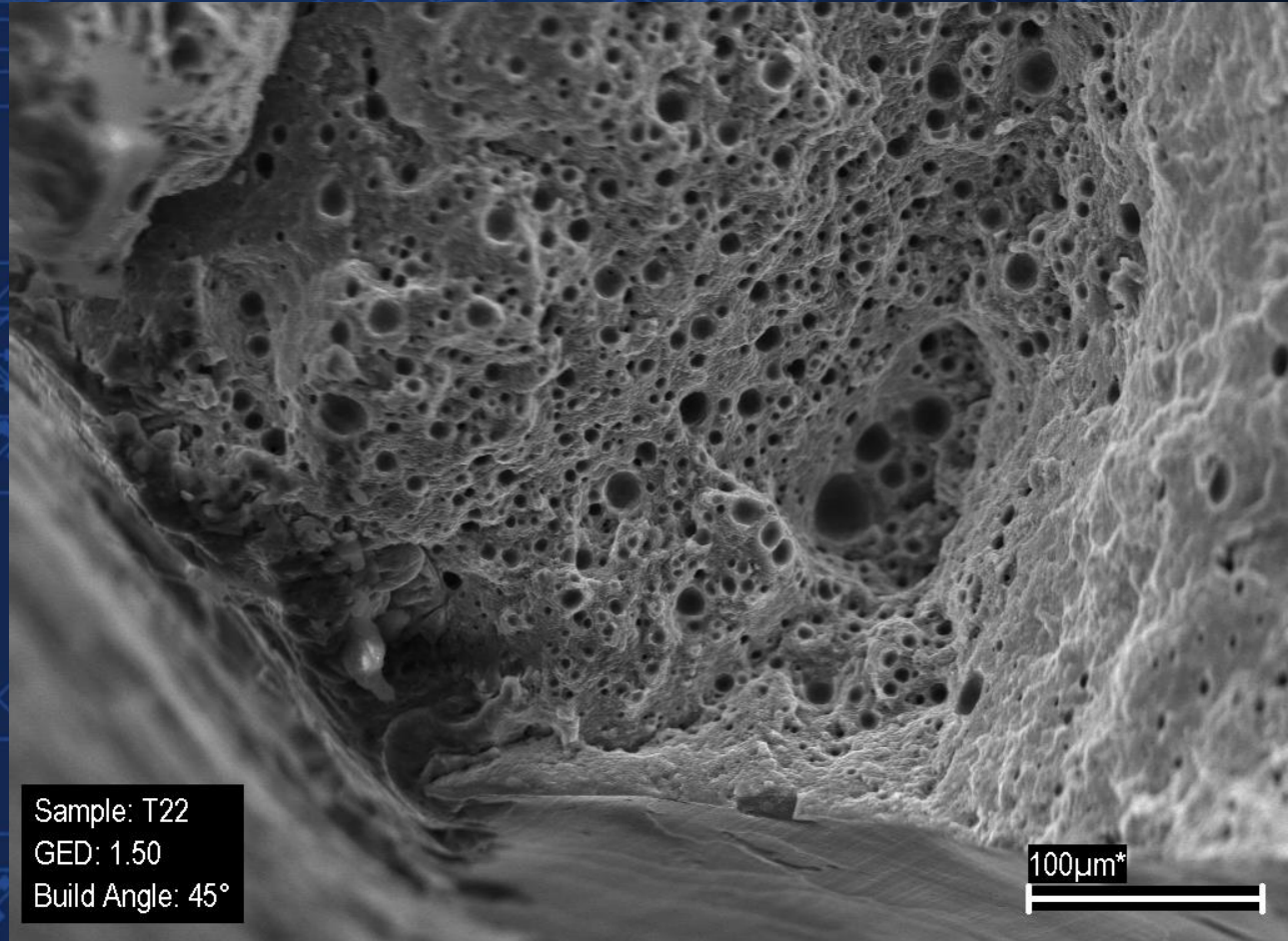
# 2021 EIPBN MicroGraph Contest

25

**Micrograph Title:**  
**Trypophobia Cave**

**Description:**  
**Porosity within a fractographic image of additively manufactured AlSi10Mg.**

**Orig. Mag (3"x4" image): 360X**  
**Instrument : LEO 1430VP SEM**  
**Submitted by: Luke J. Suttley**  
**Affiliation: Montana Tech**  
**Nanotechnology Laboratory**



Sample: T22  
GED: 1.50  
Build Angle: 45°

100µm\*

Sponsored by:





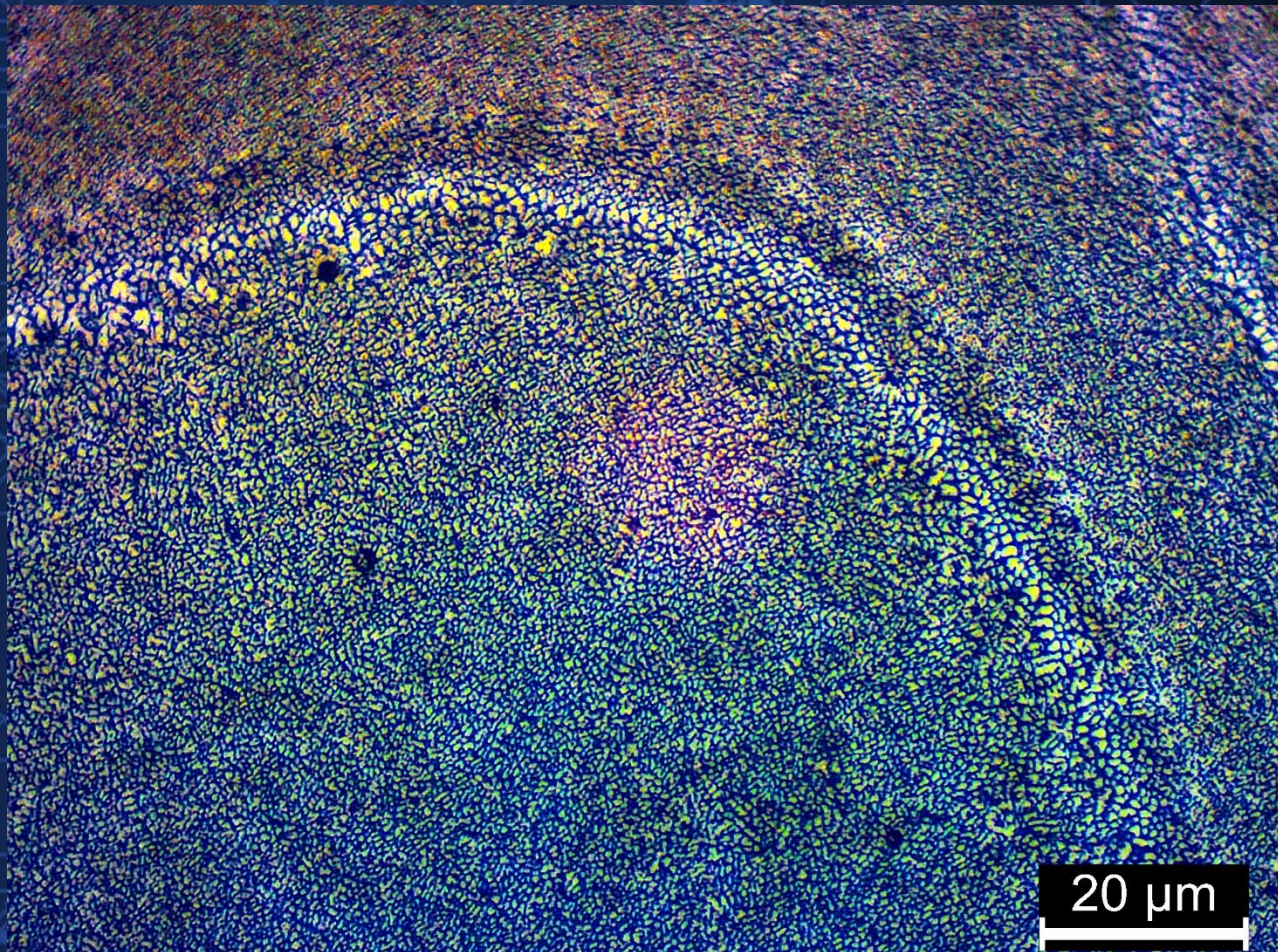
# 2021 EIPBN MicroGraph Contest

26

**Micrograph Title:**  
**Aluminum Dragon Scales**

**Description:**  
**Metallographic image of  
AlSi10Mg produced using  
additive manufacturing.**

**Orig. Mag (3"x4"image): 1KX**  
**Instrument : LEICA DM750M**  
**Submitted by: Luke J. Suttley**  
**Affiliation: Montana Tech**  
**Nanotechnology Laboratory**



Sponsored by:



## Micrograph Title:

**ET is watching...beware of the eye!**

## Description:

**A released 75nm nitride membrane supported with random pillars. Shaded area is staining from the wet etch. The yellow lines on the sides of the image are fluidic leads.**

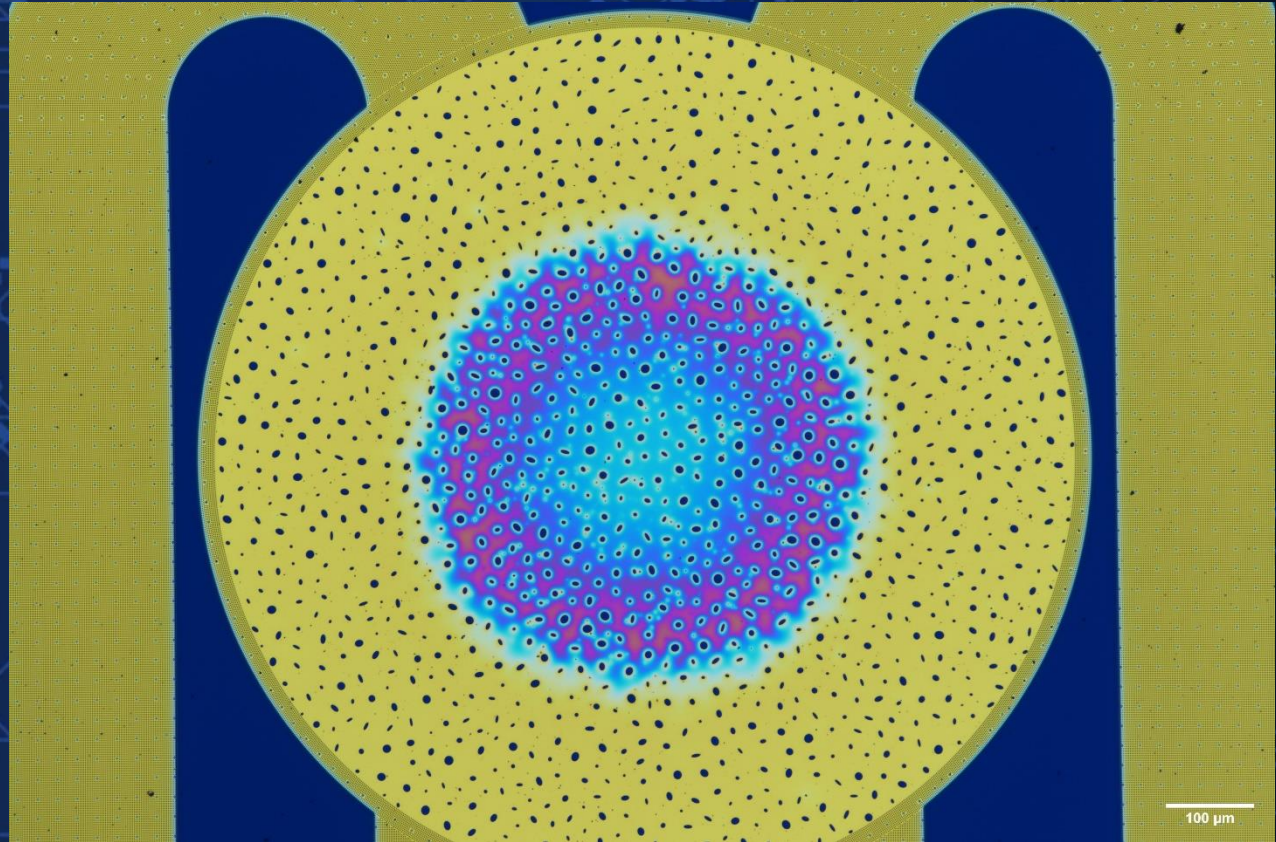
**Orig. Mag (3"x4"image): 10x**

**Instrument : Nikon L200**

**Compound Optical Microscope**

**Submitted by: Alokik Kanwal**

**Affiliation: NIST**



Sponsored by:





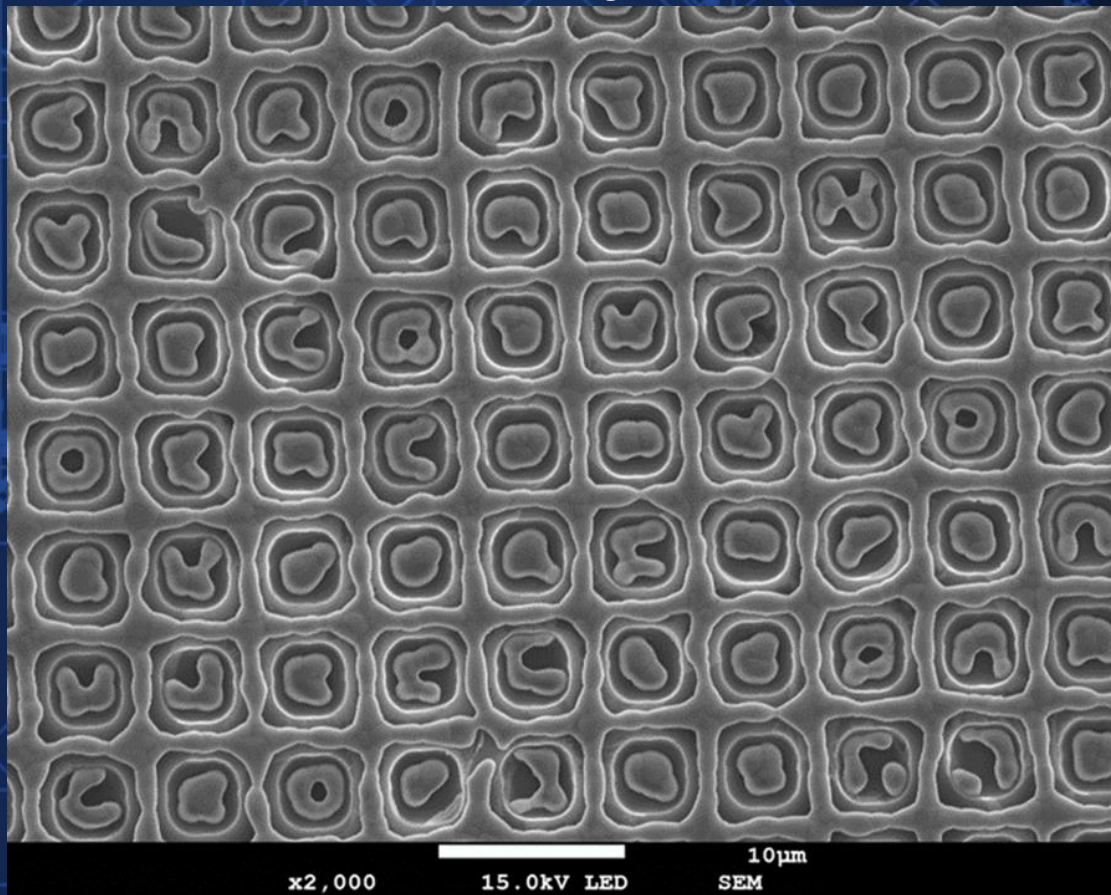
# 2021 EIPBN MicroGraph Contest

28

**Micrograph Title:**  
**Alphabet**

**Description:**  
**Ni film deposited and melted on perforated SiO<sub>2</sub> surface**

**Orig. Mag (3"x4"image): 2 KX**  
**Instrument : see NIST disclaimer**  
**Submitted by: Andrei Kolmakov**  
**Affiliation: NIST**



Sponsored by:



**NIST disclaimer** Certain commercial products or company names are identified here to describe our study adequately. Such identification is not intended to imply recommendation or endorsement by the National Institute of Standards and Technology, nor is it intended to imply that the products or names identified are necessarily the best available for the purpose.



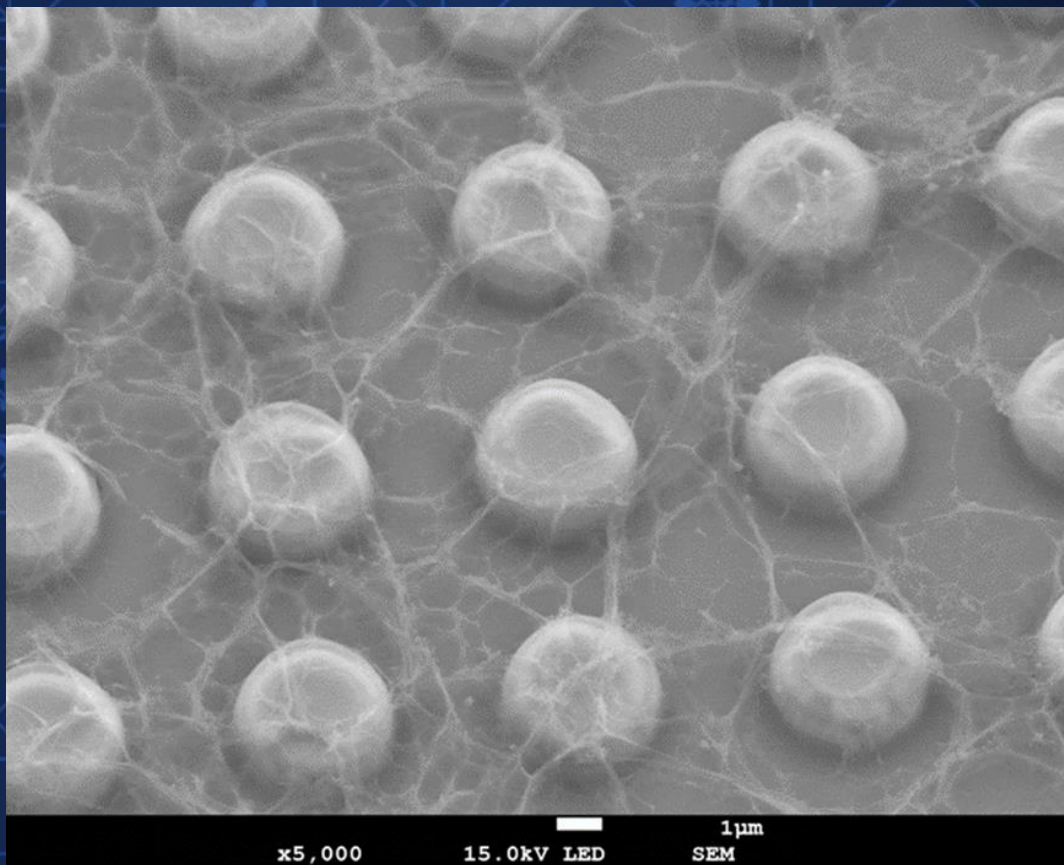
# 2021 EIPBN MicroGraph Contest

29

**Micrograph Title:**  
**Neural Network**

**Description:**  
**PMMA graphene film placed  
over Cu studs and etched with  
oxygen plasma**

**Orig. Mag (3"x4"image): 5 KX**  
**Instrument : see NIST disclaimer**  
**Submitted by: Andrei Kolmakov**  
**Affiliation: NIST**



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**NIST disclaimer** Certain commercial products or company names are identified here to describe our study adequately. Such identification is not intended to imply recommendation or endorsement by the National Institute of Standards and Technology, nor is it intended to imply that the products or names identified are necessarily the best available for the purpose.



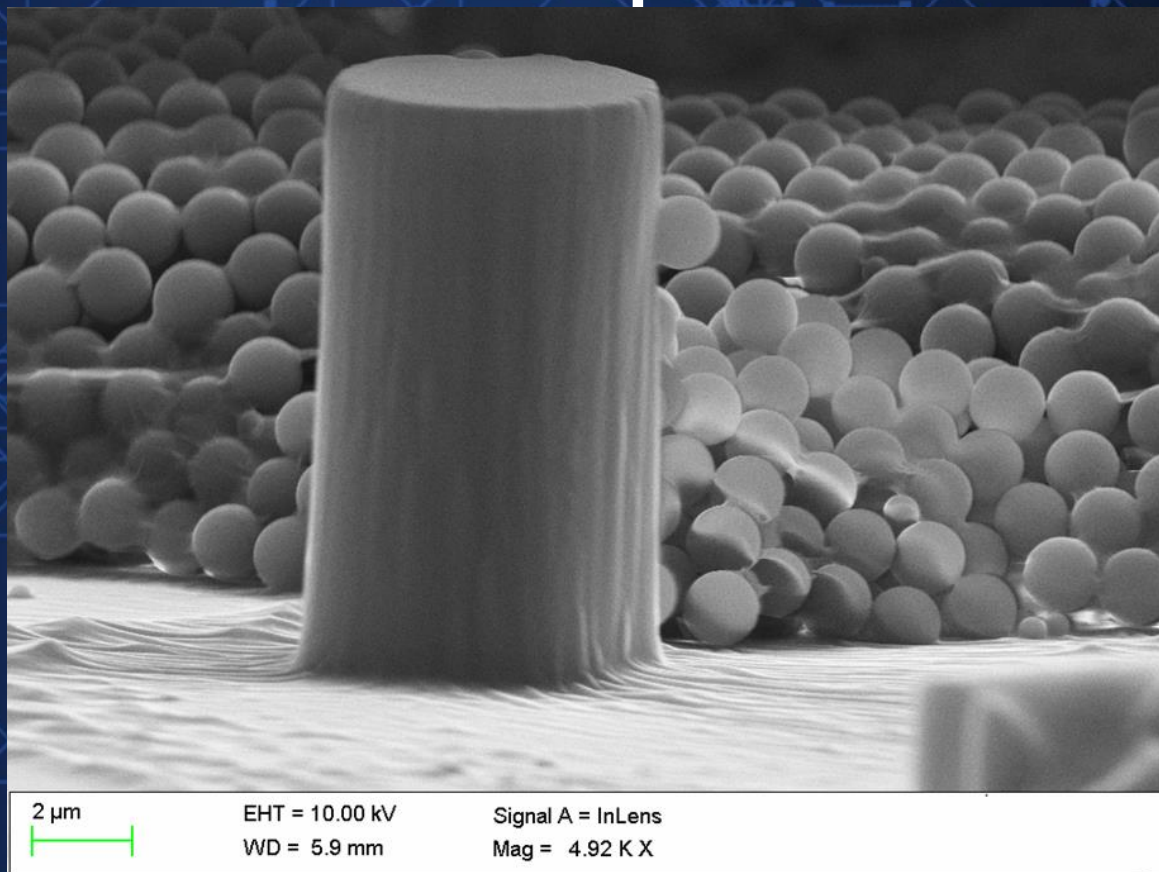
# 2021 EIPBN MicroGraph Contest

30

**Micrograph Title:**  
**Alone**

**Description:**  
**PDMS micro post surrounded  
with polystyrene microparticles**

**Orig. Mag (3"x4"image): 4.9 KX**  
**Instrument : see NIST disclaimer**  
**Submitted by: Andrei Kolmakov**  
**Affiliation: NIST**



2  $\mu$ m



EHT = 10.00 kV

WD = 5.9 mm

Signal A = InLens

Mag = 4.92 K X

Sponsored by:



**NIST disclaimer** Certain commercial products or company names are identified here to describe our study adequately. Such identification is not intended to imply recommendation or endorsement by the National Institute of Standards and Technology, nor is it intended to imply that the products or names identified are necessarily the best available for the purpose.



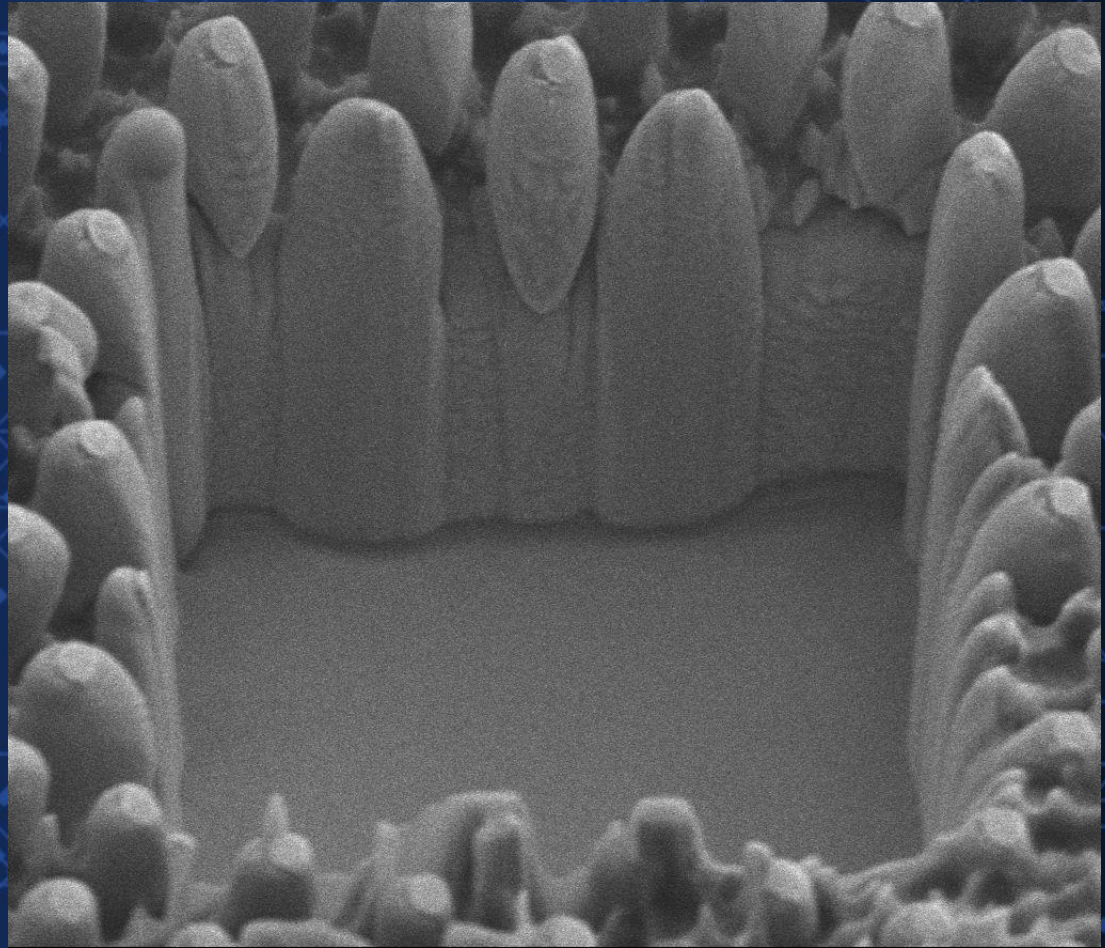
# 2021 EIPBN MicroGraph Contest

31

**Micrograph Title:**  
**Knights of the Rectangular Table**

**Description:**  
**These are PDMS pillars with cobalt on top.**

**Orig. Mag (3"x4"image): 8 KX**  
**Instrument : FEI Quanta 3D FEG**  
**Submitted by: Zhiren Luo**  
**Affiliation: University of Texas at Austin**



Sponsored by:





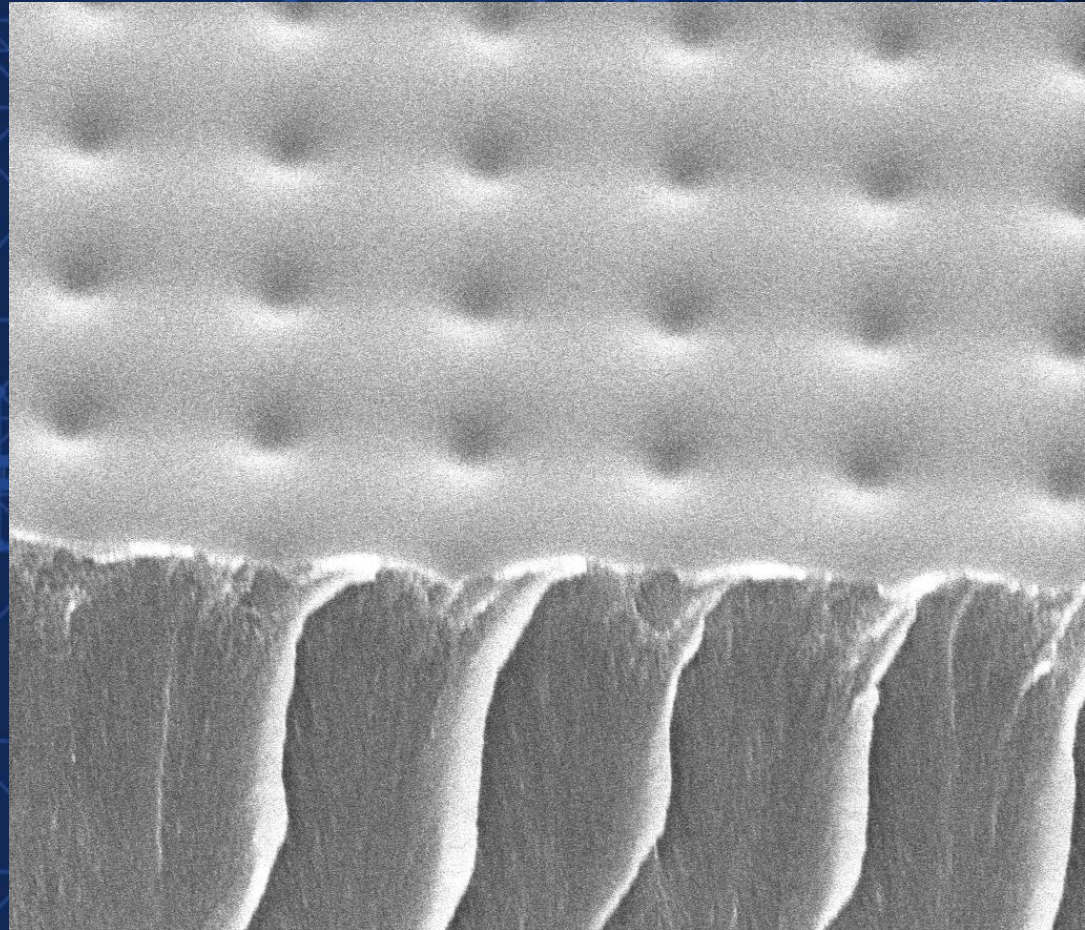
# 2021 EIPBN MicroGraph Contest

32

**Micrograph Title:**  
**Soda crackers**

**Description:**  
**The SU-8 mold with over exposure.**

**Orig. Mag (3"x4"image): 12 KX**  
**Instrument : FEI Quanta 3D FEG**  
**Submitted by: Zhiren Luo**  
**Affiliation: University of Texas at Austin**



Sponsored by:







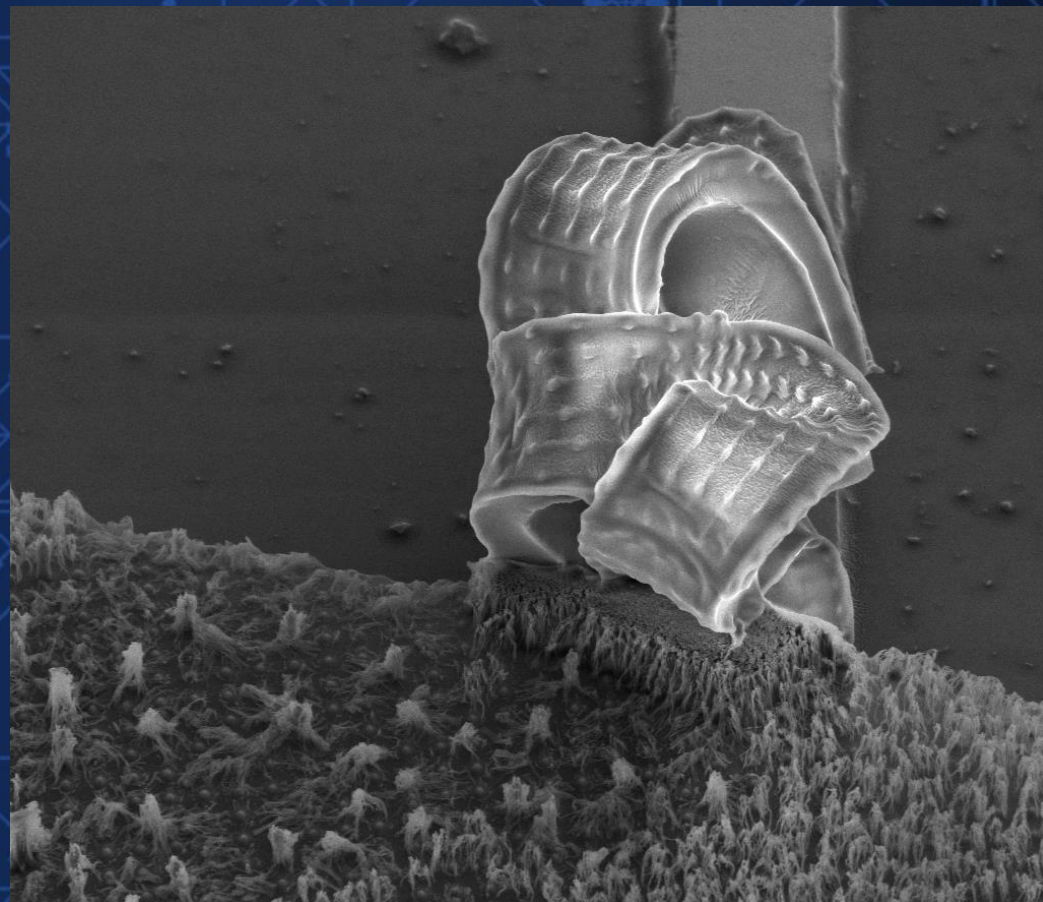
# 2021 EIPBN MicroGraph Contest

33

**Micrograph Title:**  
**Twisted micro-octopus**

**Description:**  
Some part of PDMS pattern was peeled and twisted after RIE etching.

**Orig. Mag (3"x4"image): 2 KX**  
**Instrument : FEI Quanta 3D FEG**  
**Submitted by: Zhiren Luo**  
**Affiliation: University of Texas at Austin**



Sponsored by:

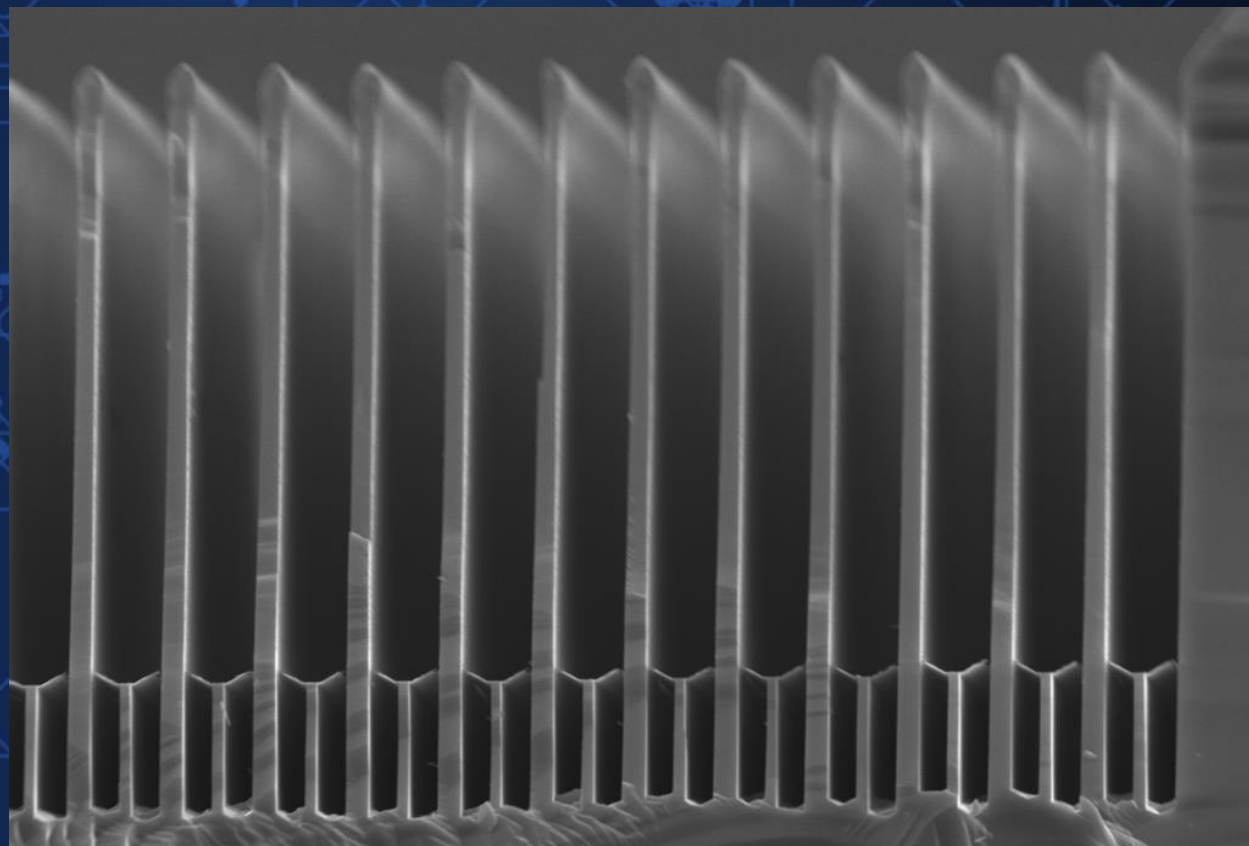


	HV 5.00 kV	mag  1 999 x	WD 11.3 mm	curr 53.3 pA	tilt 45 °	HFV 63.5 μm	 20 μm
---	---------------	--	---------------	-----------------	--------------	----------------	---

**Micrograph Title:**  
**Nanotrenches within  
microtrenches**

**Description:**  
**Nano- and micro-trenches in  
silicon.**

**Orig. Mag (3"x4"image): 2.8KX**  
**Instrument : Zeiss ULTRA plus**  
**Submitted by: Huseyin Ekcinci**  
**Affiliation: University of Waterloo**



Width = 40.90  $\mu\text{m}$   
File Name = 1\_1\_25.tif

2  $\mu\text{m}$

Mag = 2.80 K X  
EHT = 10.00 kV  
Signal A = SE2

WD = 9.7 mm

Date : 18 Dec 2018 Time : 15:27:50  
System Vacuum = 1.28e-006 mbar

Waterloo Advanced Technology Laboratory - [www.WATLab.com](http://www.WATLab.com)

User Name = HUSEYIN

University of Waterloo Zeiss ULTRA plus

Sponsored by:





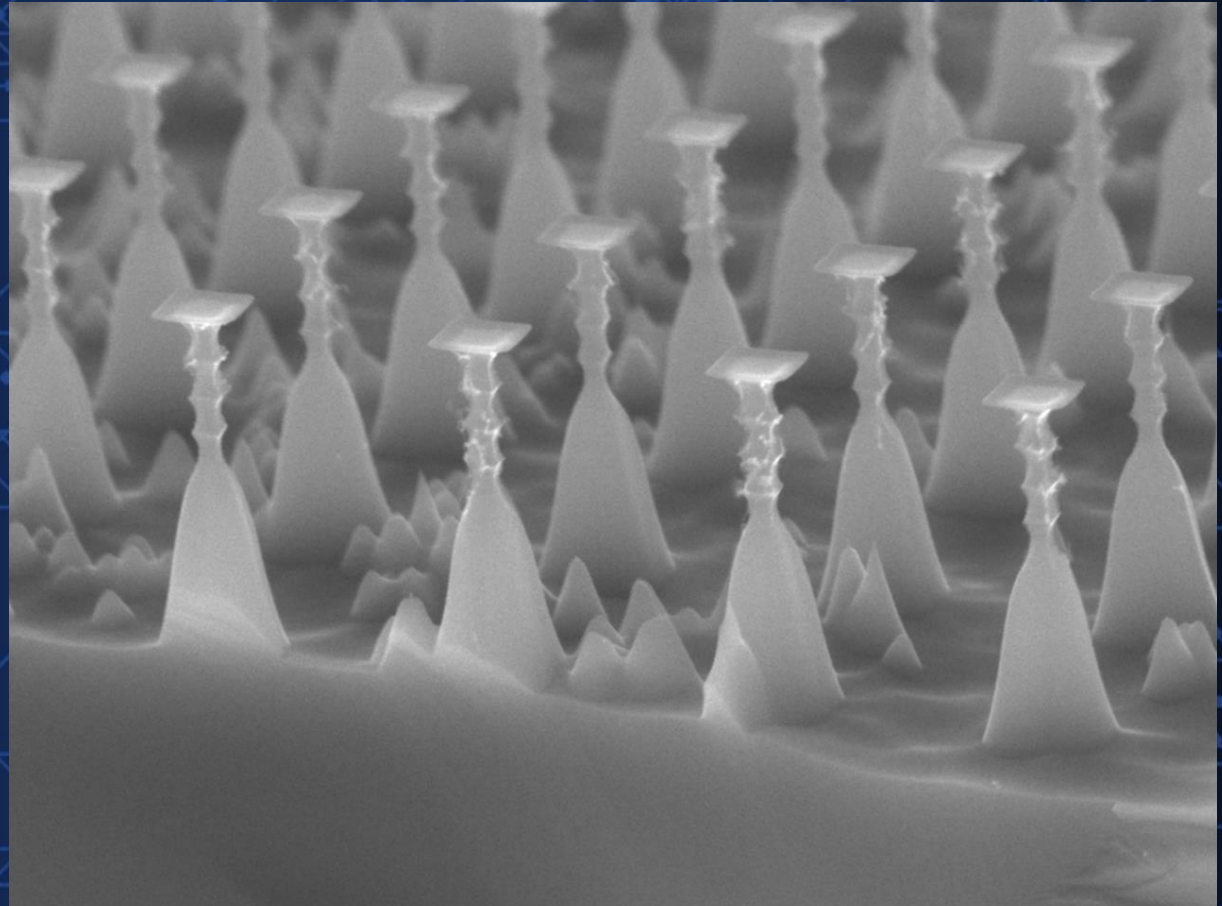
# 2021 EIPBN MicroGraph Contest

35

**Micrograph Title:**  
**Crystal goblets set to dry**

**Description:**  
**Pillar fabrication in Silicon.**

**Orig. Mag (3"x4"image): 15KX**  
**Instrument : JEOL SEM JSM-7200F**  
**Submitted by: Huseyin Ekinici**  
**Affiliation: University of Waterloo**



Sponsored by:

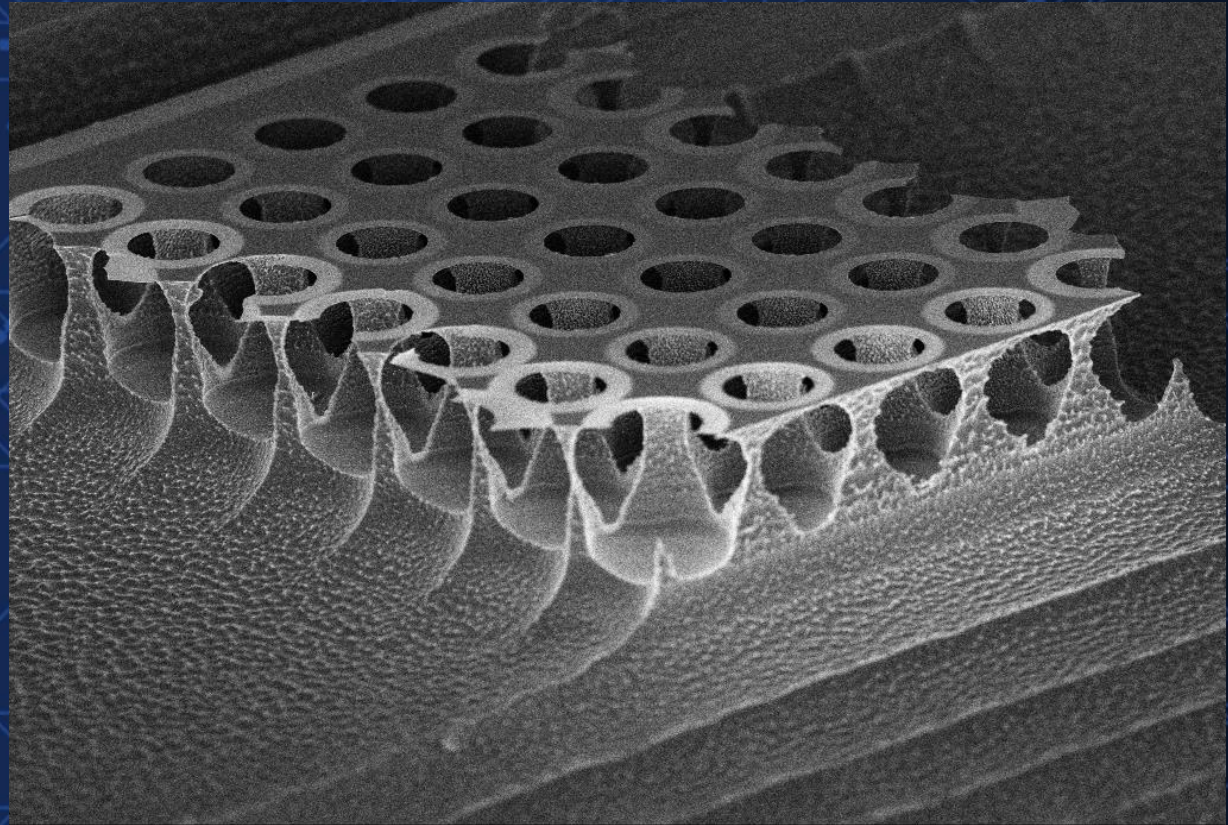


x15,000 10.0kV IED SEM 1µm QNFCF 3/2/2021 WD 6.8mm 14:25:32

**Micrograph Title:**  
**Whack-a-mole**

**Description:**  
**Fabrication of holes in  
microscale.**

**Orig. Mag (3"x4"image): 346X**  
**Instrument : Zeiss ULTRA plus**  
**Submitted by: Huseyin Ekinci**  
**Affiliation: University of Waterloo**



Width = 330.5  $\mu\text{m}$   
File Name = -90\_4+20m\_7o\_23.tif

20  $\mu\text{m}$

Mag = 346 X  
EHT = 10.00 kV

WD = 6.4 mm Date : 12 Jul 2019 Time : 18:32:19  
Signal A = InLens System Vacuum = 1.32e-006 mbar

Waterloo Advanced Technology Laboratory - www.WATLab.com

User Name = HUSEYIN

University of Waterloo Zeiss ULTRA plus

Sponsored by:





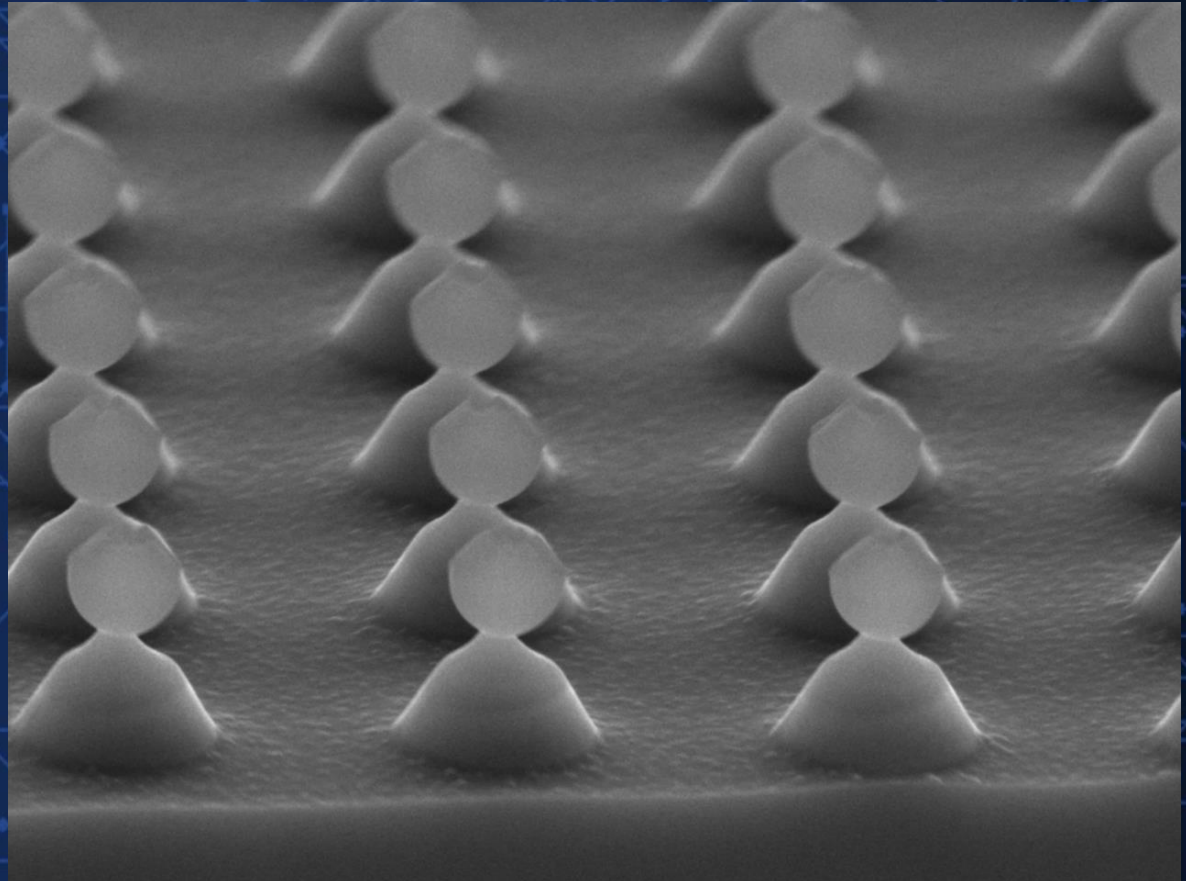
# 2021 EIPBN MicroGraph Contest

37

**Micrograph Title:**  
**Synchronized swimmers**

**Description:**  
**Etching silicon with a mask.**

**Orig. Mag (3"x4"image): 10KX**  
**Instrument : JEOL SEM JSM-7200F**  
**Submitted by: Huseyin Ekinci**  
**Affiliation: University of Waterloo**



Sponsored by:

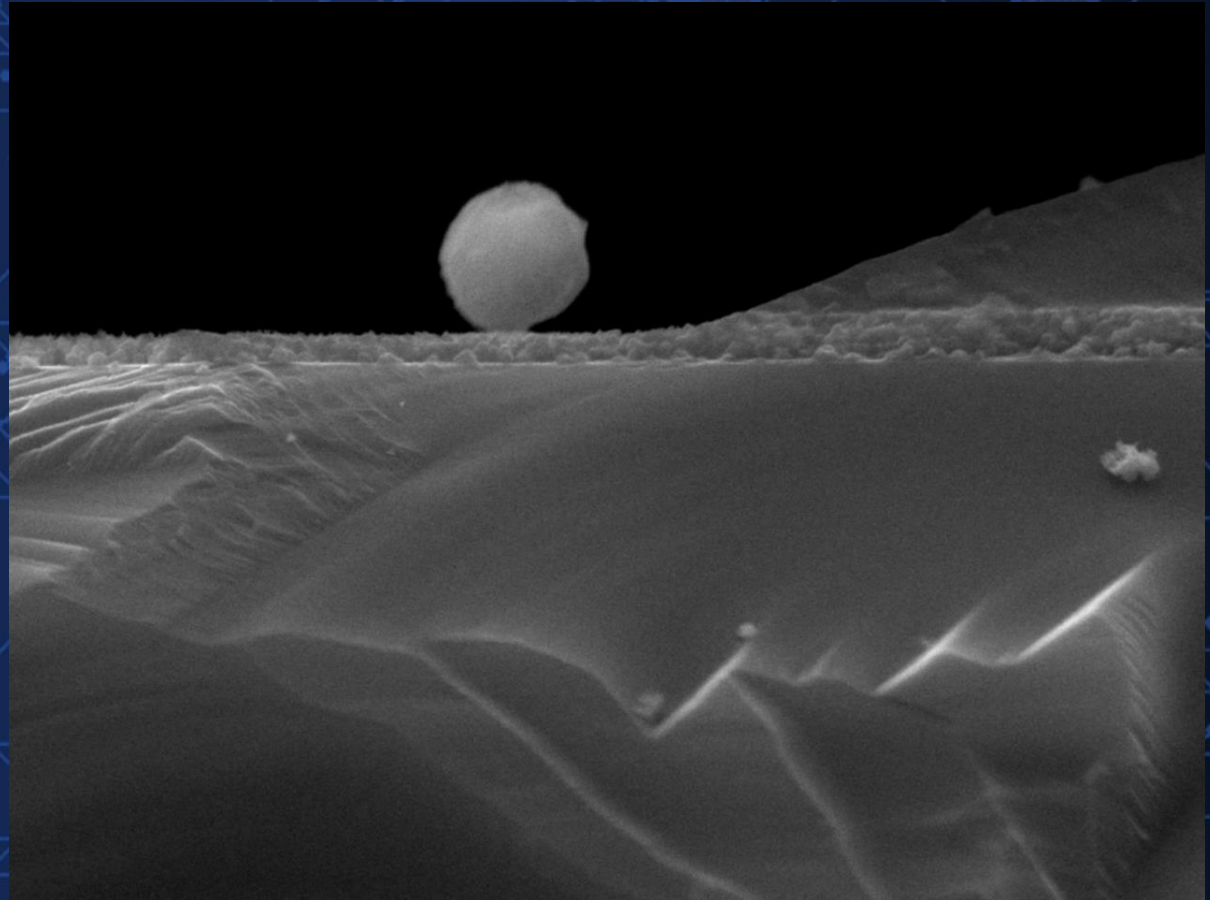


1µm 2/9/2021  
x10,000 T=20.0

**Micrograph Title:**  
**Ball rolling down a hill**

**Description:**  
**Cleaving artifact.**

**Orig. Mag (3"x4"image): 14KX**  
**Instrument : JEOL SEM JSM-7200F**  
**Submitted by: Huseyin Ekinci**  
**Affiliation: University of Waterloo**



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# 2021 EIPBN MicroGraph Contest

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## Micrograph Title: **Just Too Metal**

### Description:

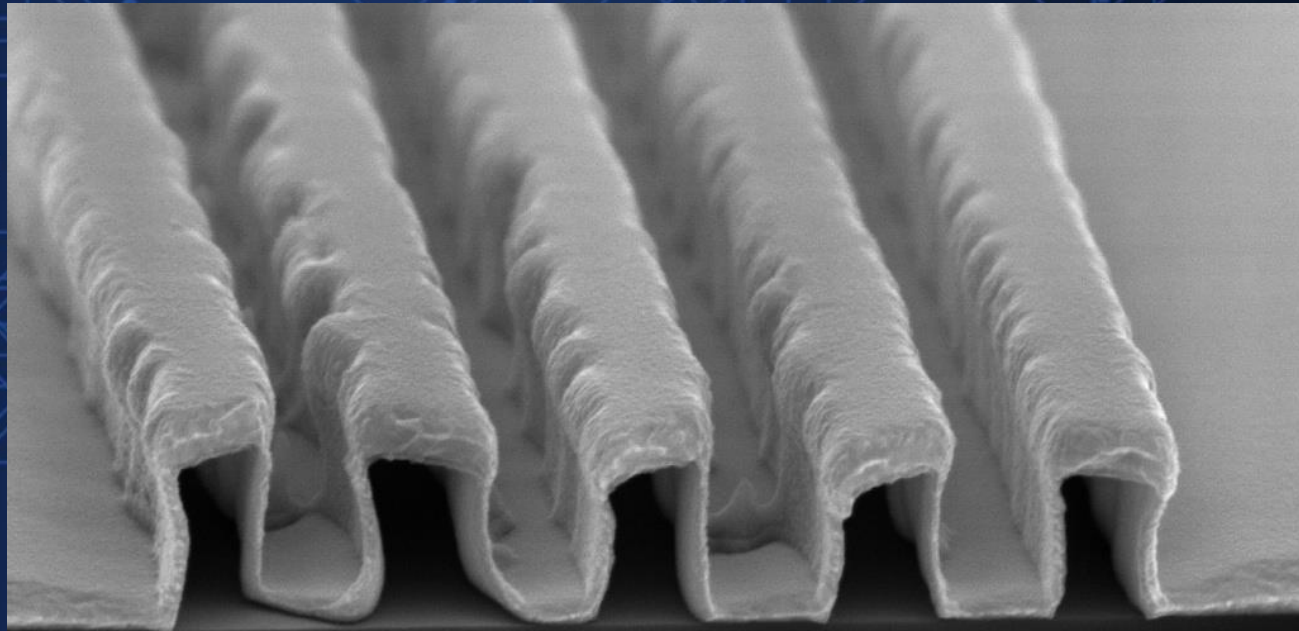
**Metal deposition creeps up photoresist wall. Photoresist is completely dissolved, leaving the 3D metal structure instead of lifting off the metal like it should. 1 micron dense line/space.**

**Orig. Mag (3"x4" image): 12,000 magnification, 70 degree tilt**

**Instrument : Carl Zeiss EVO 50 SEM**

**Submitted by: Jeremy Golden / Tyler Wozmak**

**Affiliation: KemLab Photoresist / MicroVision Labs**



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**Micrograph Title:**  
**Poppy / Flanders Fields**

**Description:**

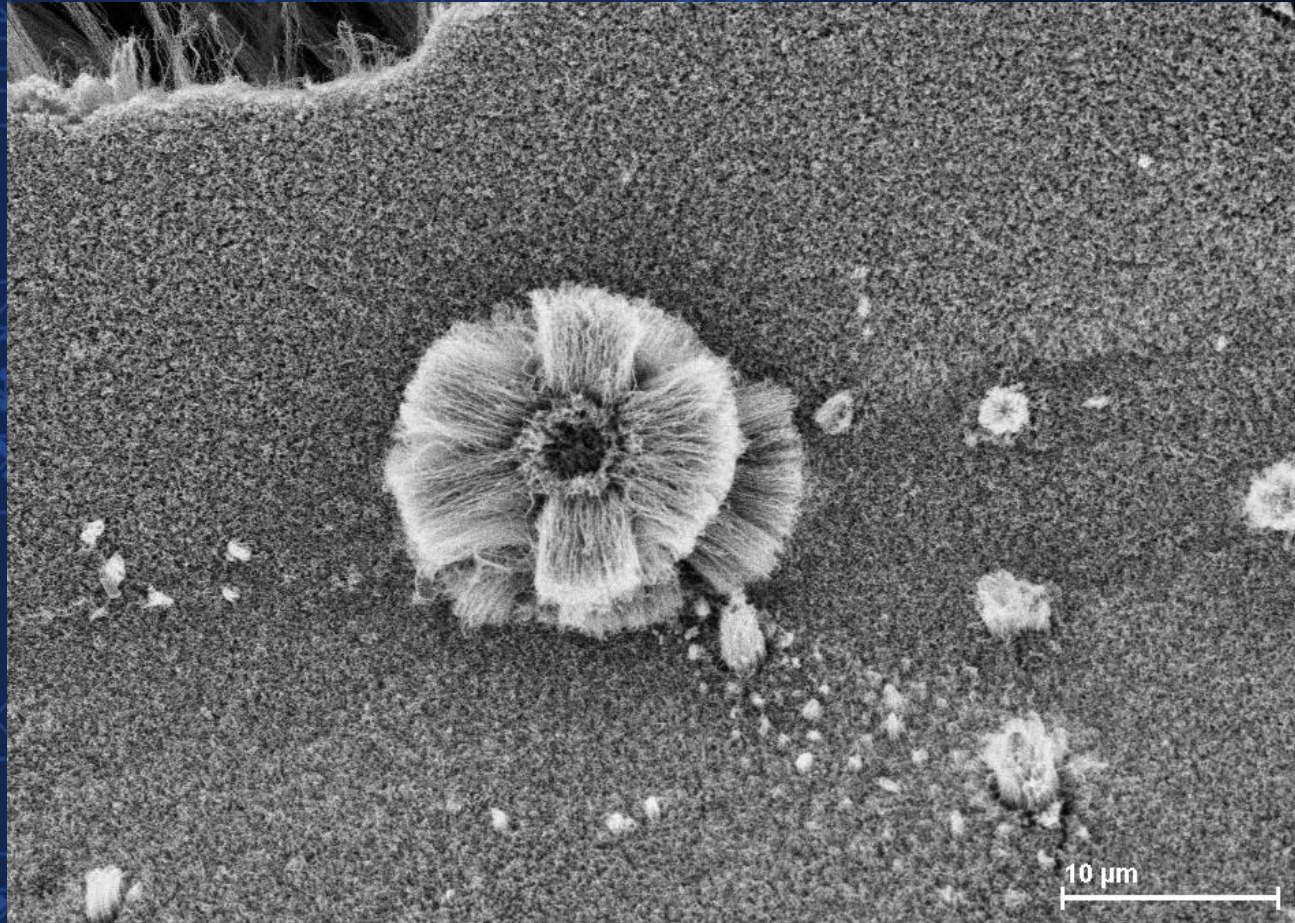
**Top surface of a vertically-aligned carbon nanotube forest. Erratic local growth defects lead to interesting microscopic structures.**

**Orig. Mag (3"x4"image): 1.76kX**

**Instrument : Zeiss Sigma VP**

**Submitted by: Mike Chang,  
Alireza Nojeh**

**Affiliation: QMI/ECE, UBC**



Sponsored by:







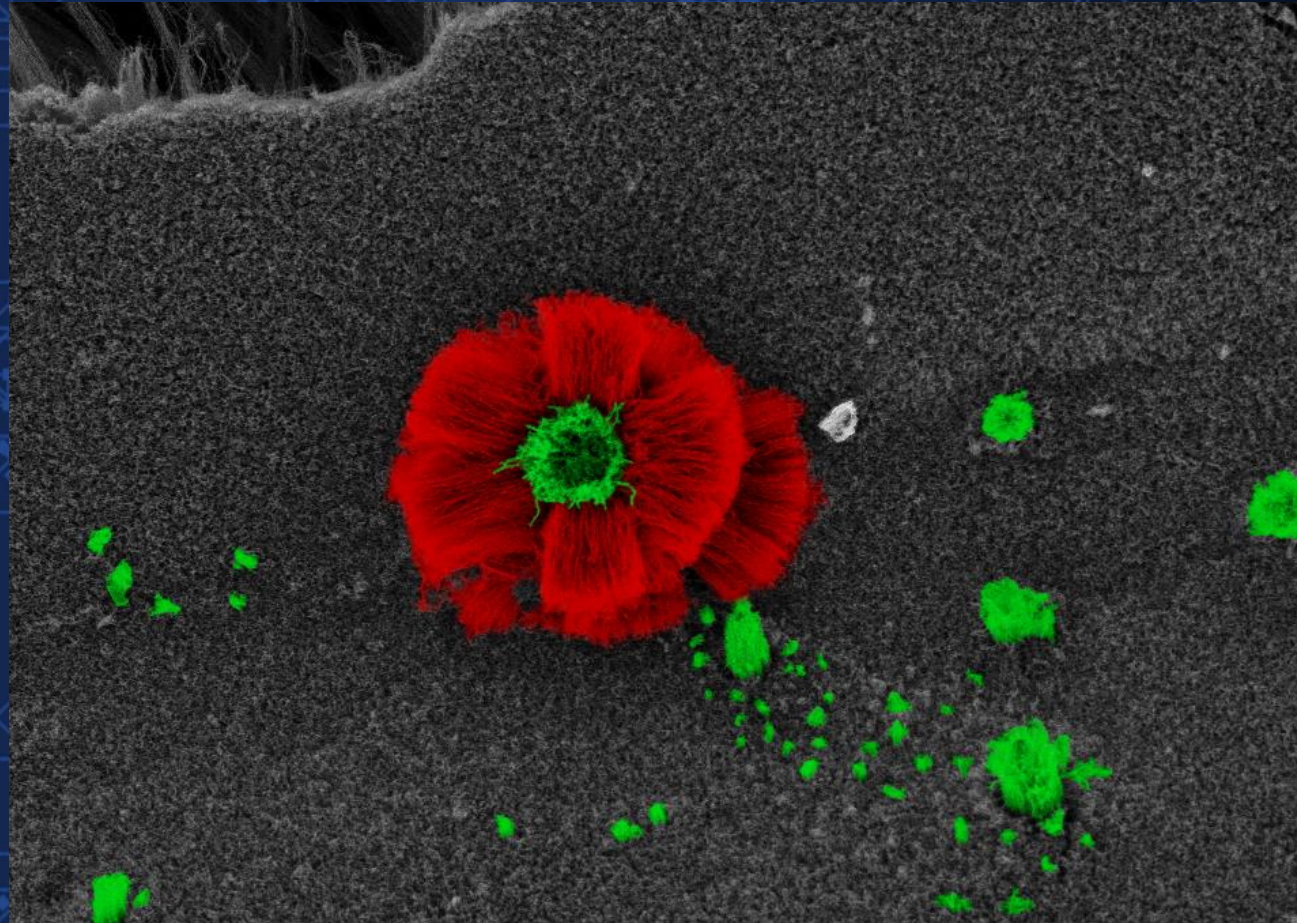
# 2021 EIPBN MicroGraph Contest

41

**Micrograph Title:**  
**Poppy / Flanders Fields**  
**(Colored)**

**Description:**  
Top surface of a vertically-aligned carbon nanotube forest. Erratic local growth defects lead to interesting microscopic structures.

**Orig. Mag (3"x4"image): 1.76kX**  
**Instrument : Zeiss Sigma VP**  
**Submitted by: Mike Chang,**  
**Alireza Nojeh**  
**Affiliation: QMI/ECE, UBC**



Sponsored by:





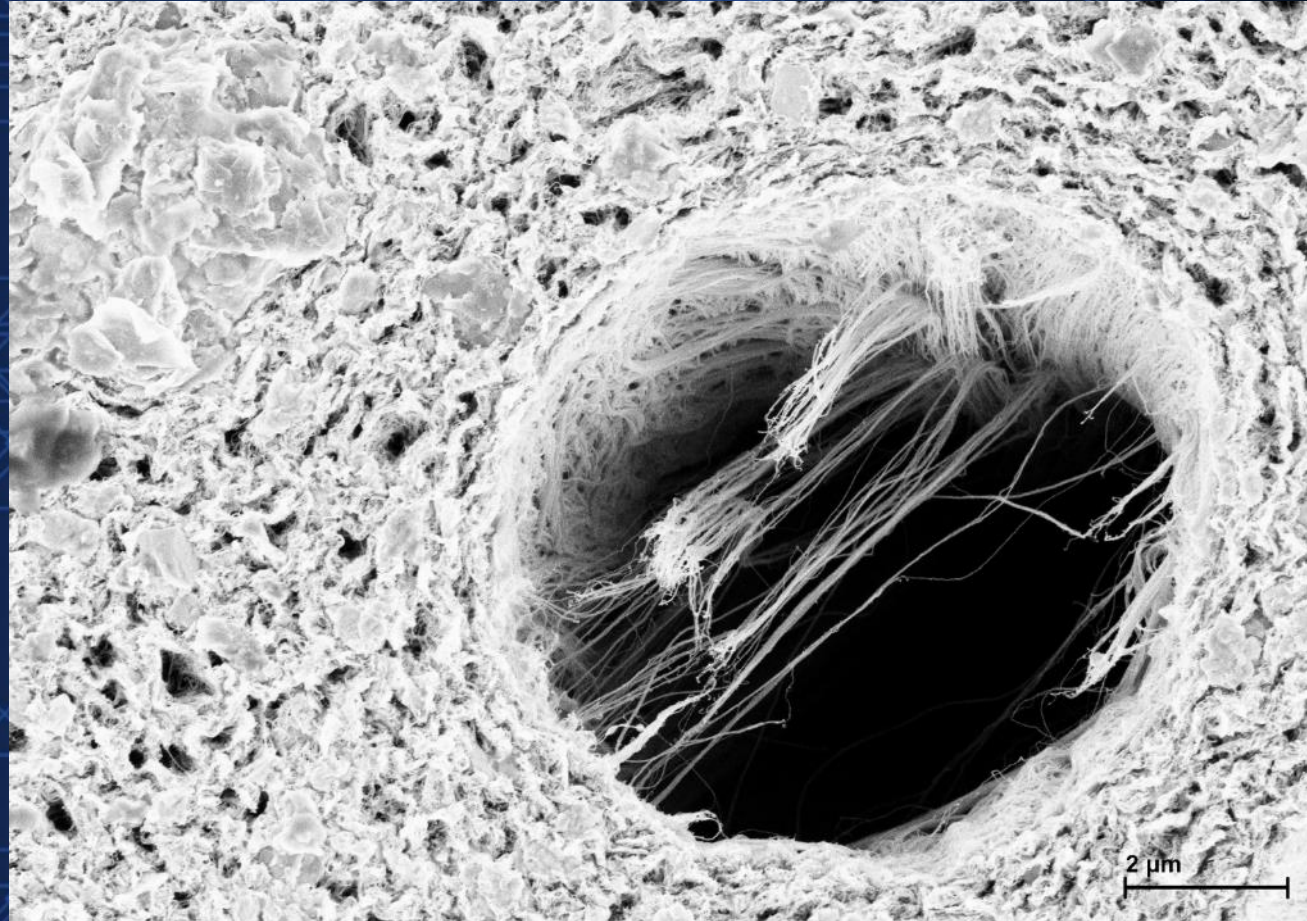
# 2021 EIPBN MicroGraph Contest

42

**Micrograph Title:**  
**Abandoned Well**

**Description:**  
An oversaturated micrograph of an empty hole in a carbon nanotube forest due to catalyst film defect.

Orig. Mag (3"x4"image): 7.14kX  
Instrument : Zeiss Sigma VP  
Submitted by: Mike Chang,  
Alireza Nojeh  
Affiliation: QMI/ECE, UBC



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# 2021 EIPBN MicroGraph Contest

43

**Micrograph Title:**  
**A Fluffy Mess / Micro-Loofah**

**Description:**  
**A tangled up strand of carbon nanotubes.**

**Orig. Mag (3"x4"image): 10.03kX**  
**Instrument : Zeiss Sigma VP**  
**Submitted by: Mike Chang,**  
**Alireza Nojeh**  
**Affiliation: QMI/ECE, UBC**

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# 2021 EIPBN MicroGraph Contest

44

**Micrograph Title:**

**Spinnaker**

**Description:**

**A broken scrap of silicon substrate resembling a spinnaker.**

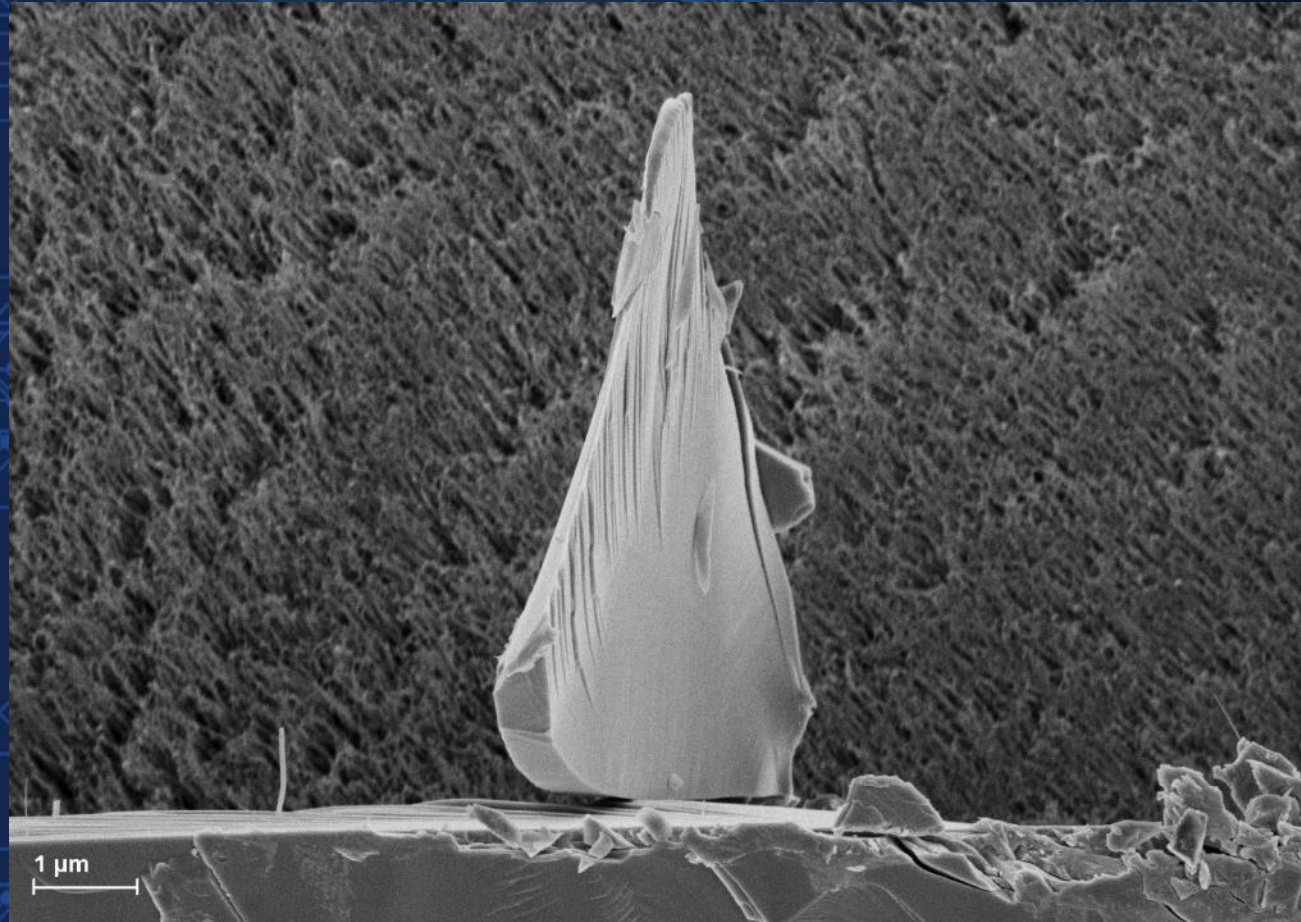
**Orig. Mag (3"x4"image): 9.17kX**

**Instrument : Zeiss Sigma VP**

**Submitted by: Mike Chang,**

**Alireza Nojeh**

**Affiliation: QMI/ECE, UBC**



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# 2021 EIPBN MicroGraph Contest

45

**Micrograph Title:**

**Seed and Grow**

**Description:**

**Not every hard work is rewarded**

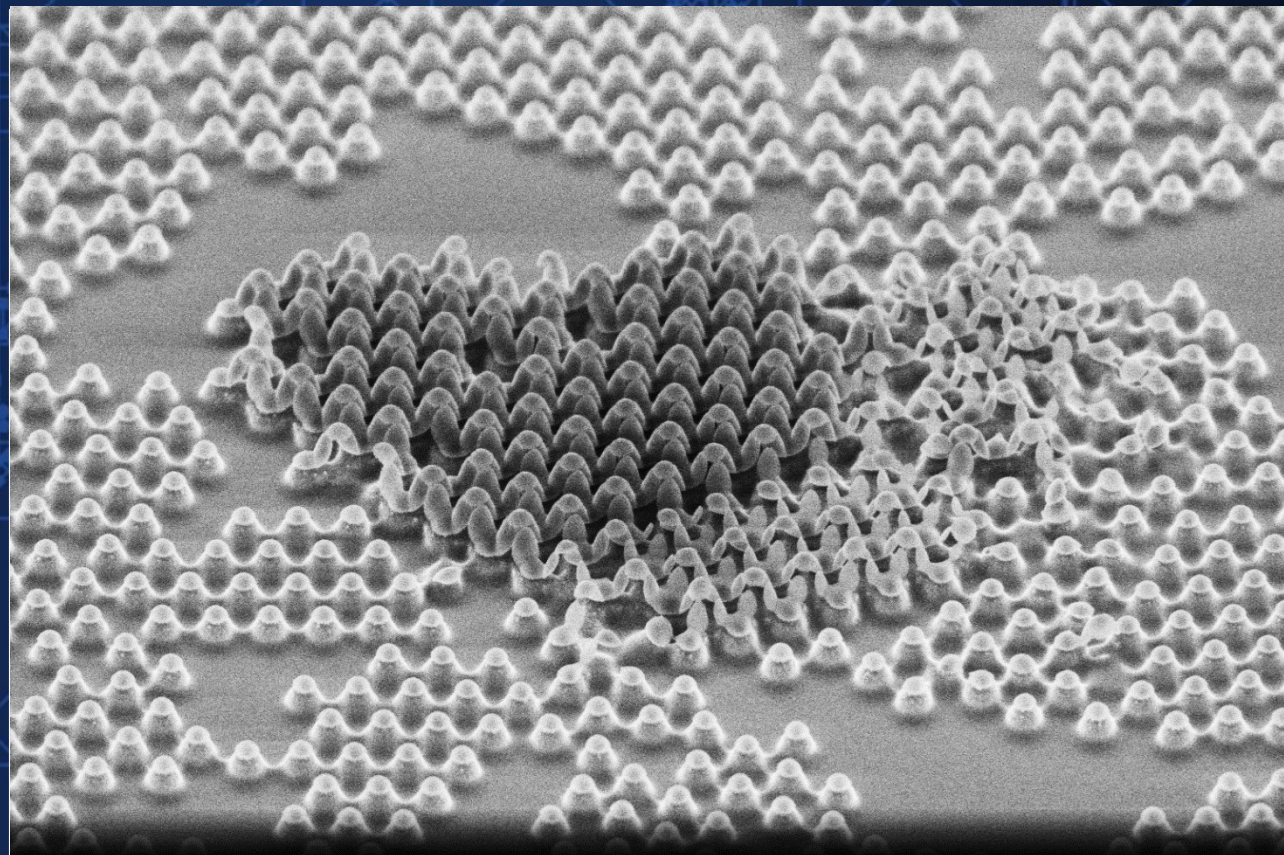
**Orig. Mag (3"x4"image): 15KX**

**Instrument : Verios 460L**

**Submitted by: I-Te Chen**

**Affiliation: The University of**

**Texas at Austin**



mag	15 000 x	HV	2.00 kV	curr	13 pA	bias	0 V	WD	4.8 mm	det	TLD	mode	SE	tilt	45 °	3 μm	
															NCSU AIF Verios 460L		

Sponsored by:





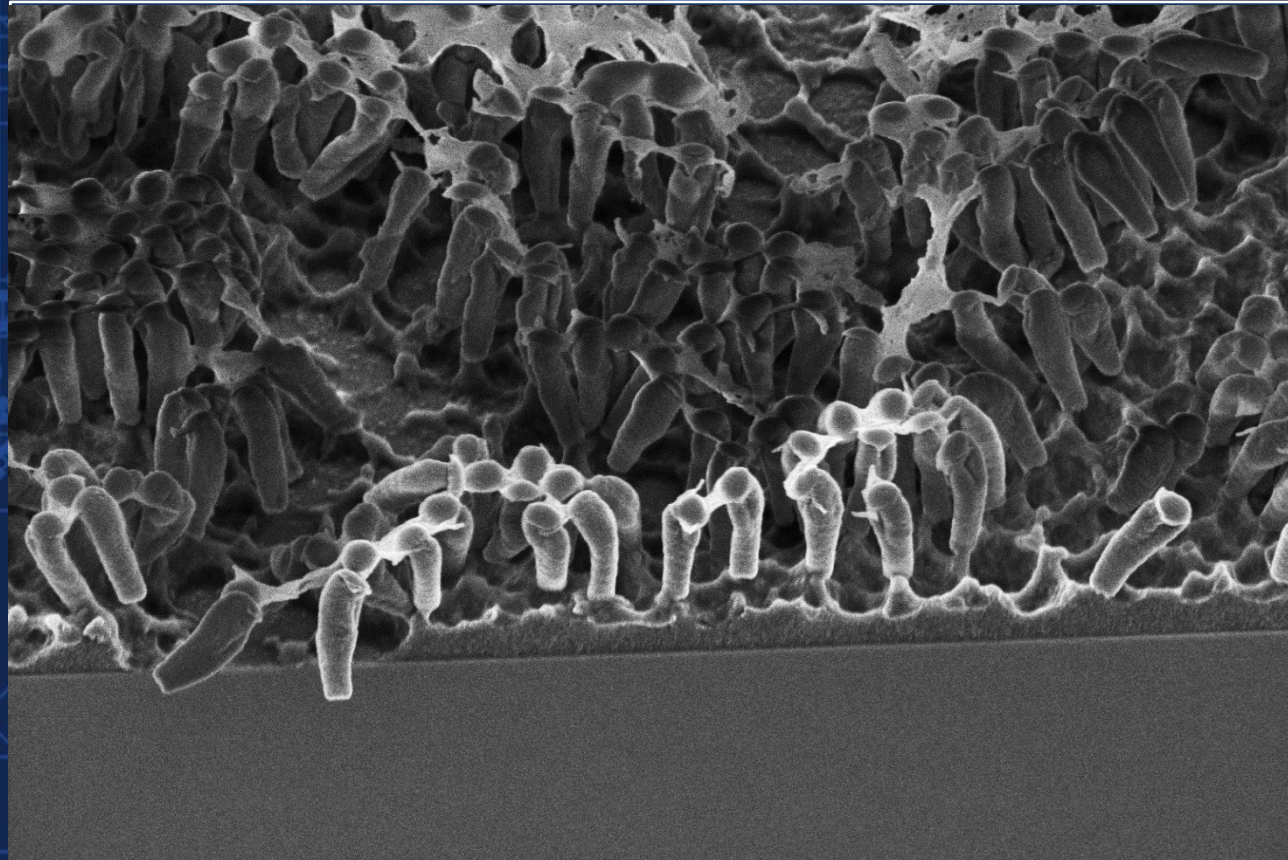
# 2021 EIPBN MicroGraph Contest

46

**Micrograph Title:**  
**Social Distance!**

**Description:**  
**This is how virus spread**

**Orig. Mag (3"x4"image): 15KX**  
**Instrument : Verios 460L**  
**Submitted by: I-Te Chen**  
**Affiliation: The University of Texas at Austin**



mag	15 000 x	HV	2.00 kV	curr	13 pA	bias	0 V	WD	5.1 mm	det	TLD	mode	SE	tilt	45 °	3 μm	
																NCSU AIF Verios 460L	

Sponsored by:





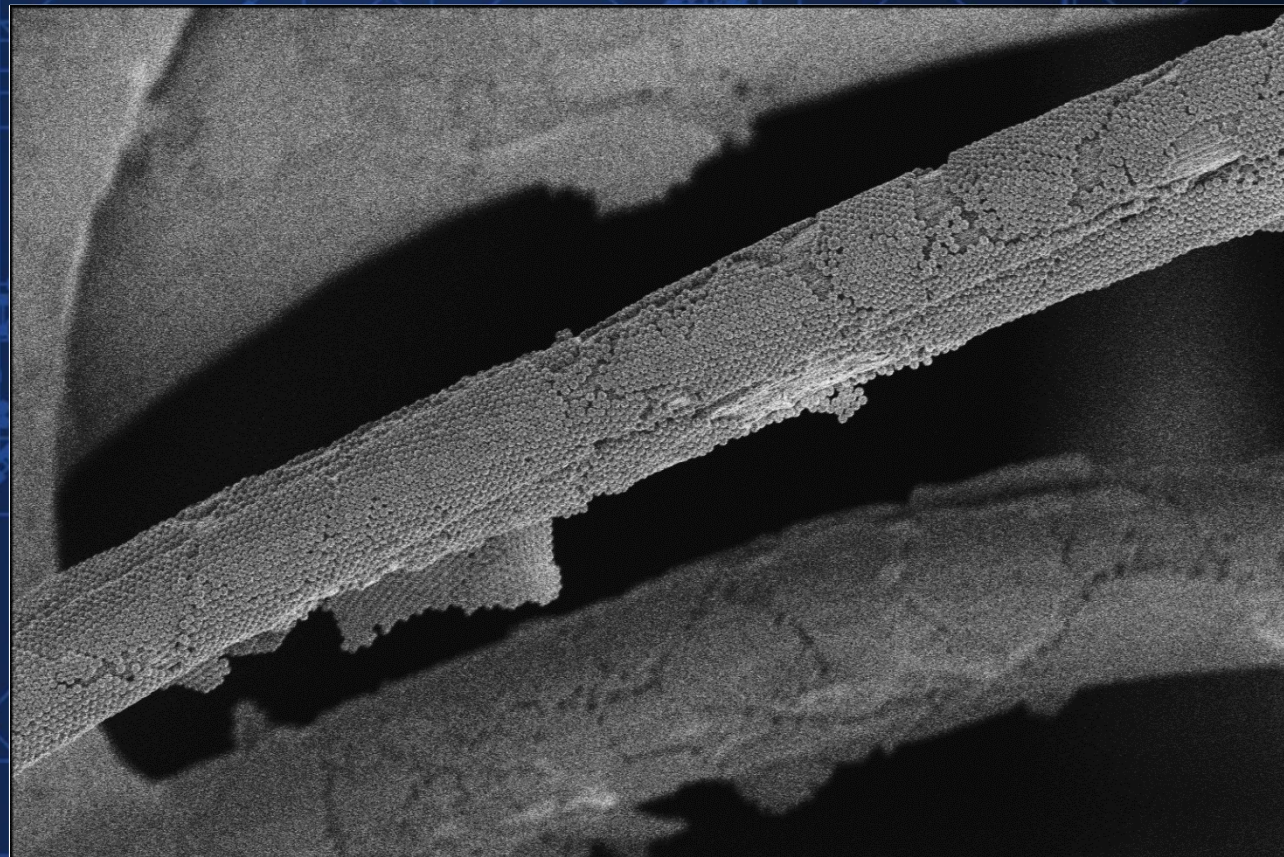
# 2021 EIPBN MicroGraph Contest

47

**Micrograph Title:**  
**Nano Corn.**

**Description:**  
**Quantity matter!**

**Orig. Mag (3"x4"image): 2.5KX**  
**Instrument : Verios 460L**  
**Submitted by: I-Te Chen**  
**Affiliation: The University of Texas at Austin**



mag	只	HV	curr	bias	WD	det	mode	tilt	20 μm	
2 504 x		2.00 kV	13 pA	0 V	5.0 mm	TLD	SE	0 °	NCSU AIF Verios 460L	

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# 2021 EIPBN MicroGraph Contest

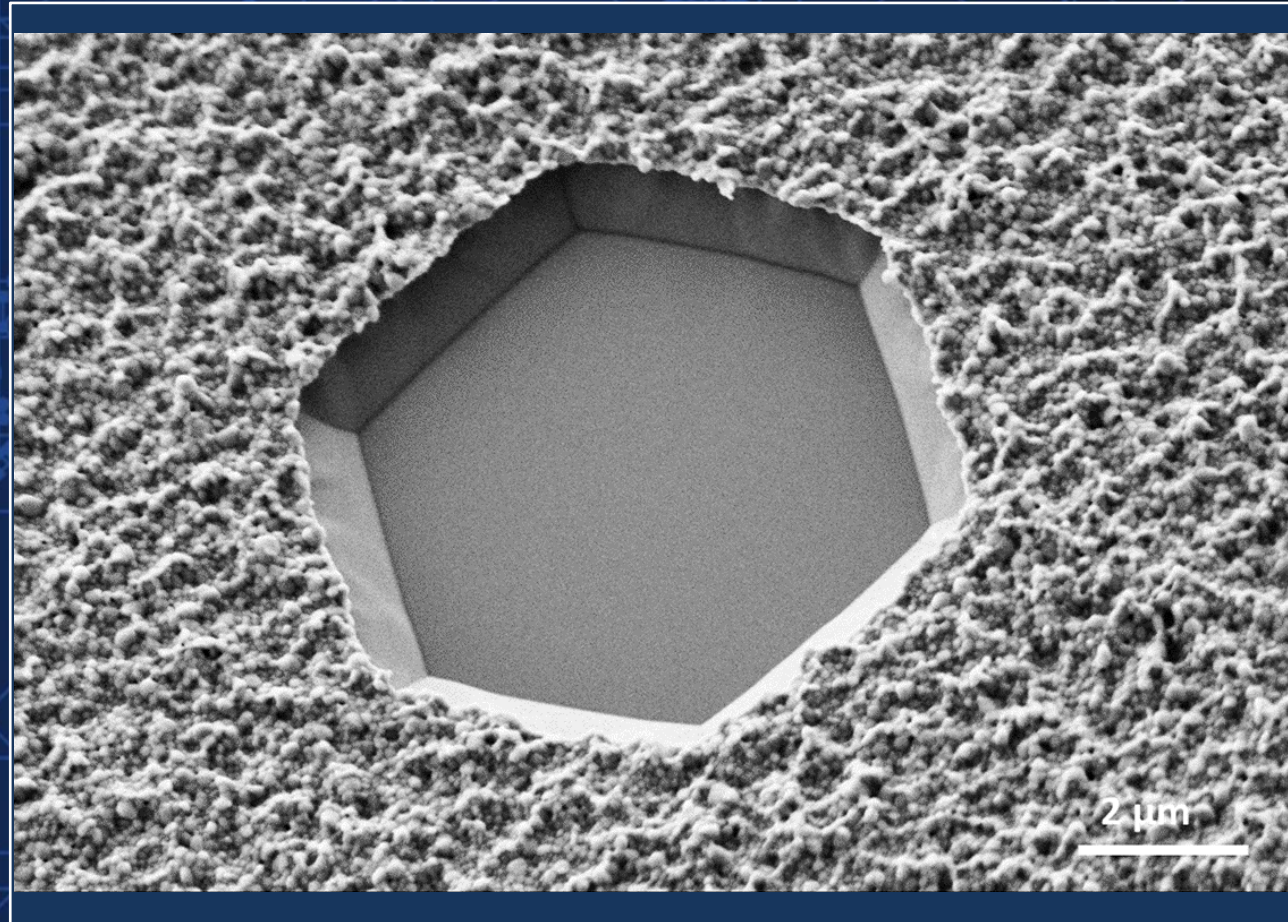
48

**Micrograph Title:**  
**Discovering Hexagonal Ruins**

**Description:**  
**AlN film on SiC substrate after High Thermal Annealing in 1500°C.**

**Orig. Mag (3"x4"image): 20KX**  
**Instrument : ZEISS SEM LEO1530**

**Submitted by: Sofia Aslanidou**  
**Affiliation: IMB-CNM-CSIC / UAB**



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# 2021 EIPBN MicroGraph Contest

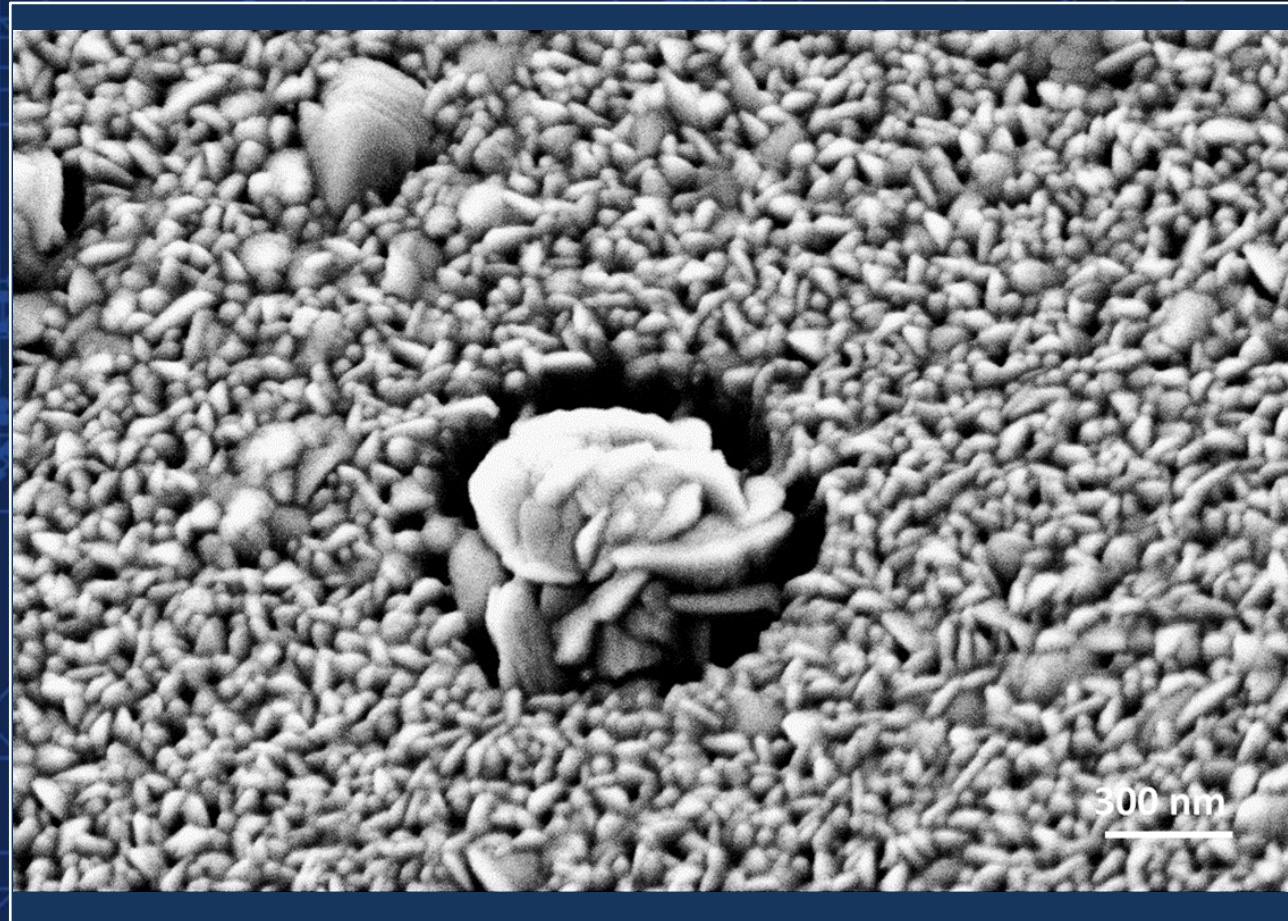
49

**Micrograph Title:**  
**Roses are Grey**

**Description:**  
**AlN film Sputtered on SiC Substrate.**

**Orig. Mag (3"x4"image): 100KX**  
**Instrument : ZEISS SEM**  
**LEO1530**

**Submitted by: Sofia Aslanidou**  
**Affiliation: IMB-CNM-CSIC / UAB**



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# 2021 EIPBN MicroGraph Contest

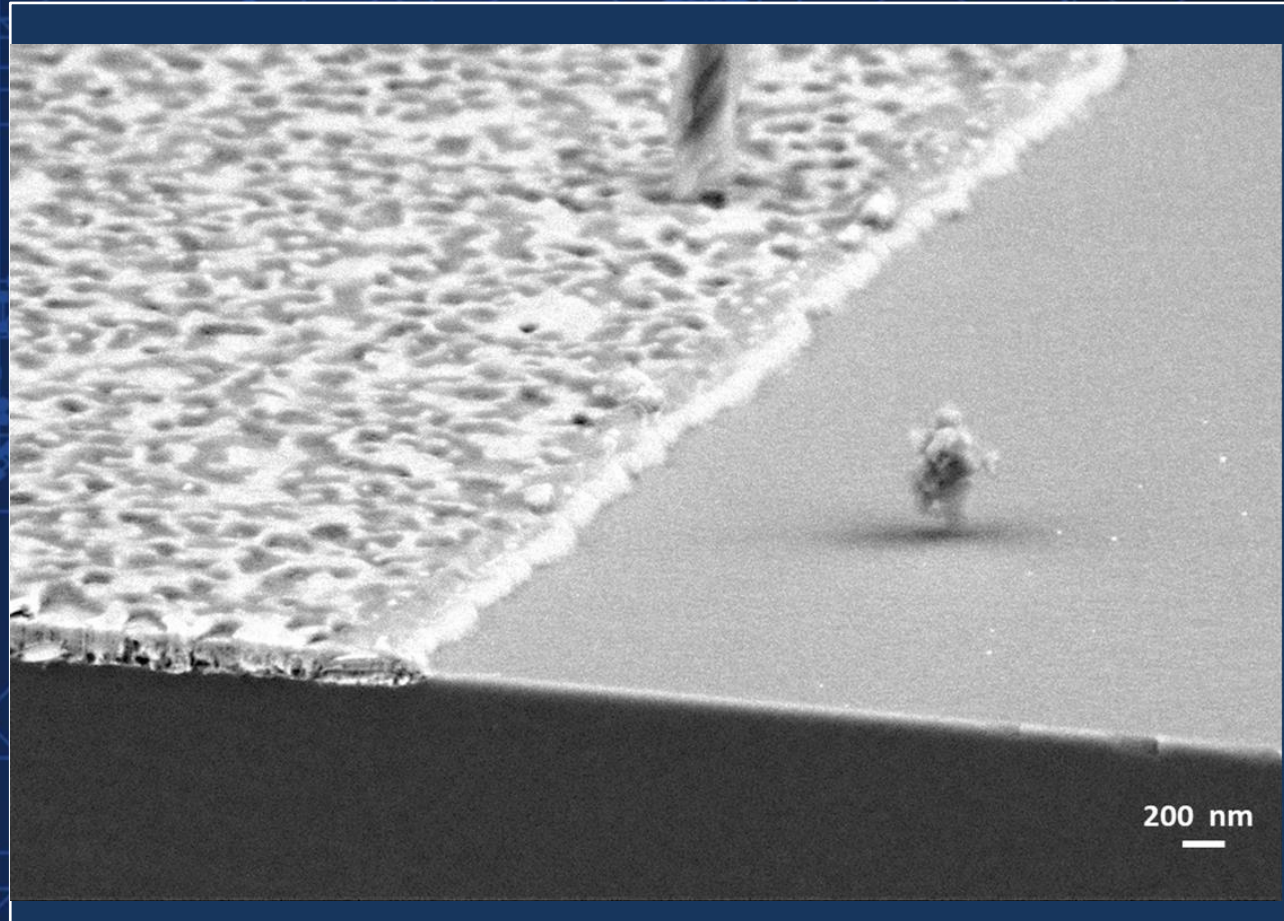
50

**Micrograph Title:**  
**One lonely tree in the sea.**

**Description:**  
**Cross section SEM showing the interface of Ni metal contact on N+ implanted SiC substrate.**

**Orig. Mag (3"x4"image): 50KX**  
**Instrument : ZEISS SEM**  
**LEO1530**

**Submitted by: Sofia Aslanidou**  
**Affiliation: IMB-CNM-CSIC / UAB**



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