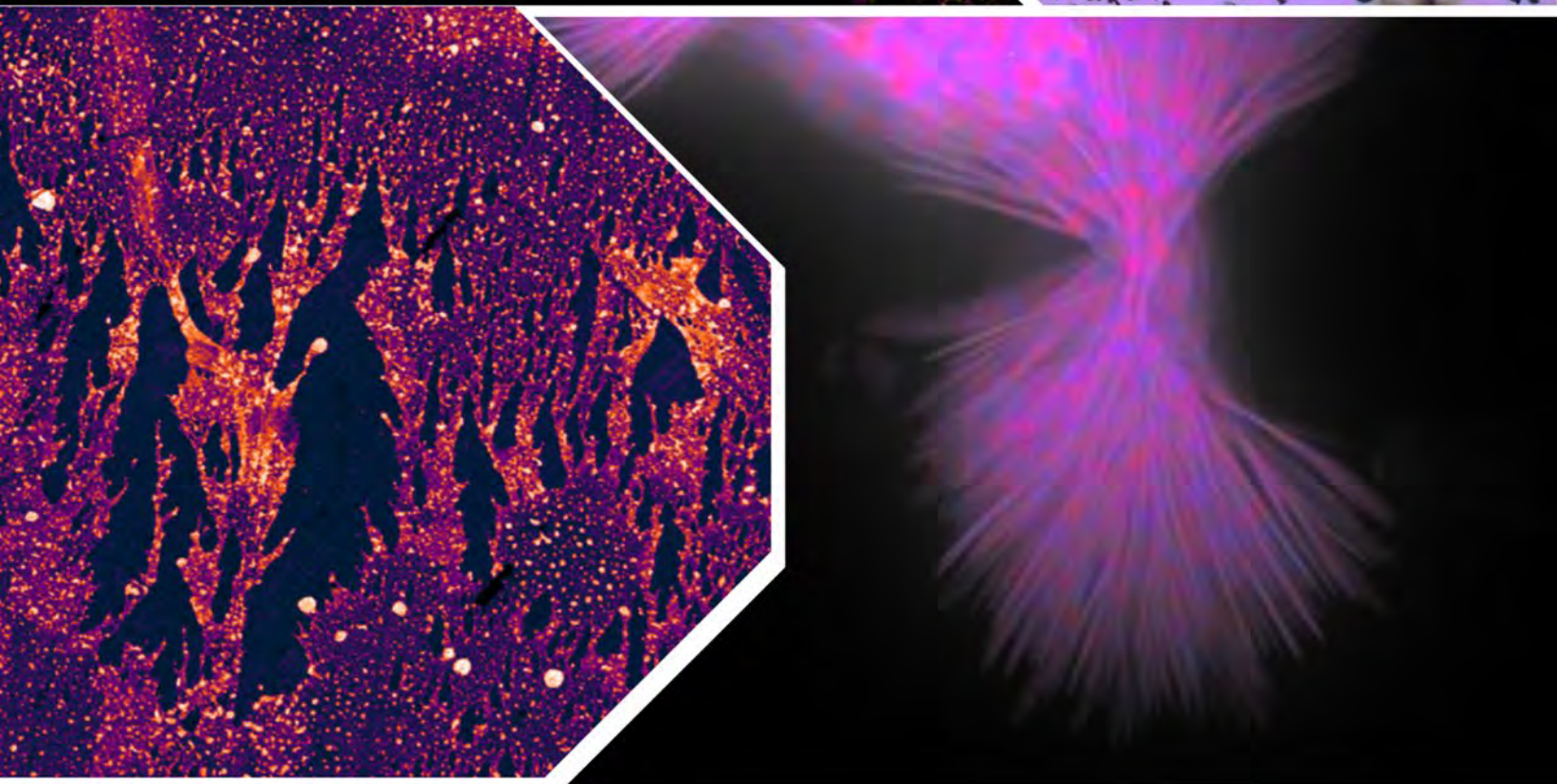
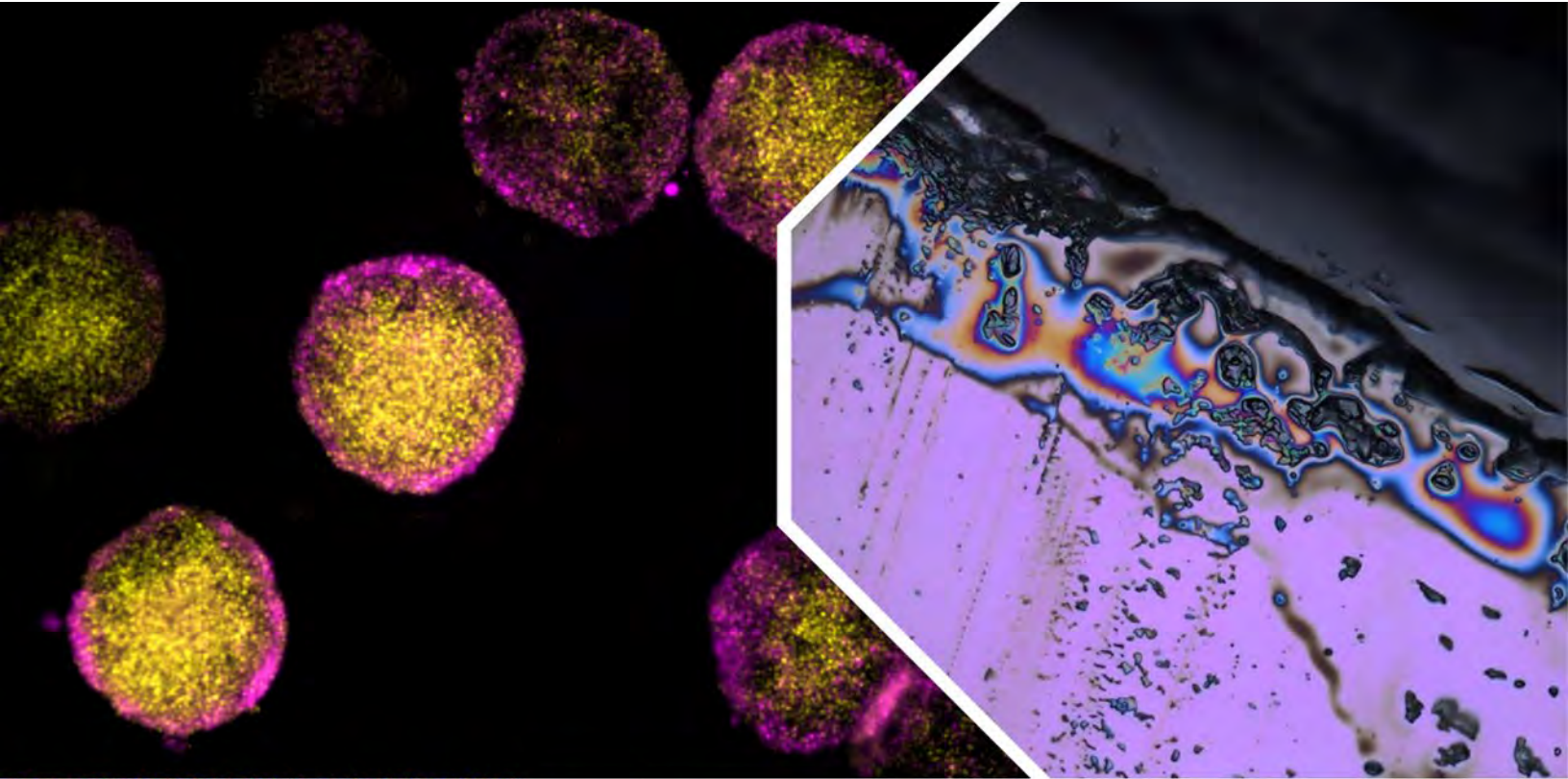
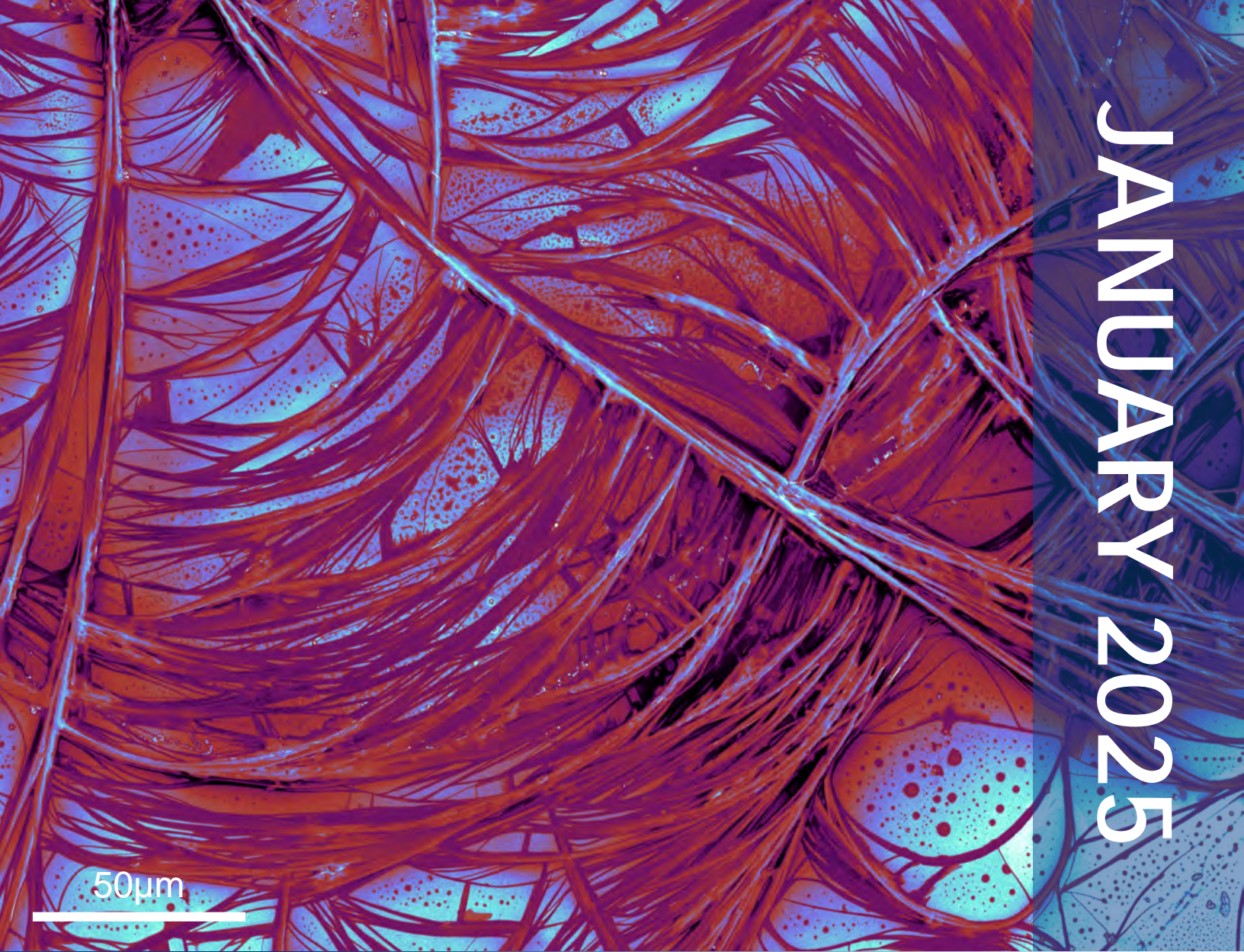


2025



V ^{••••} i N S E

JANUARY 2025



50µm

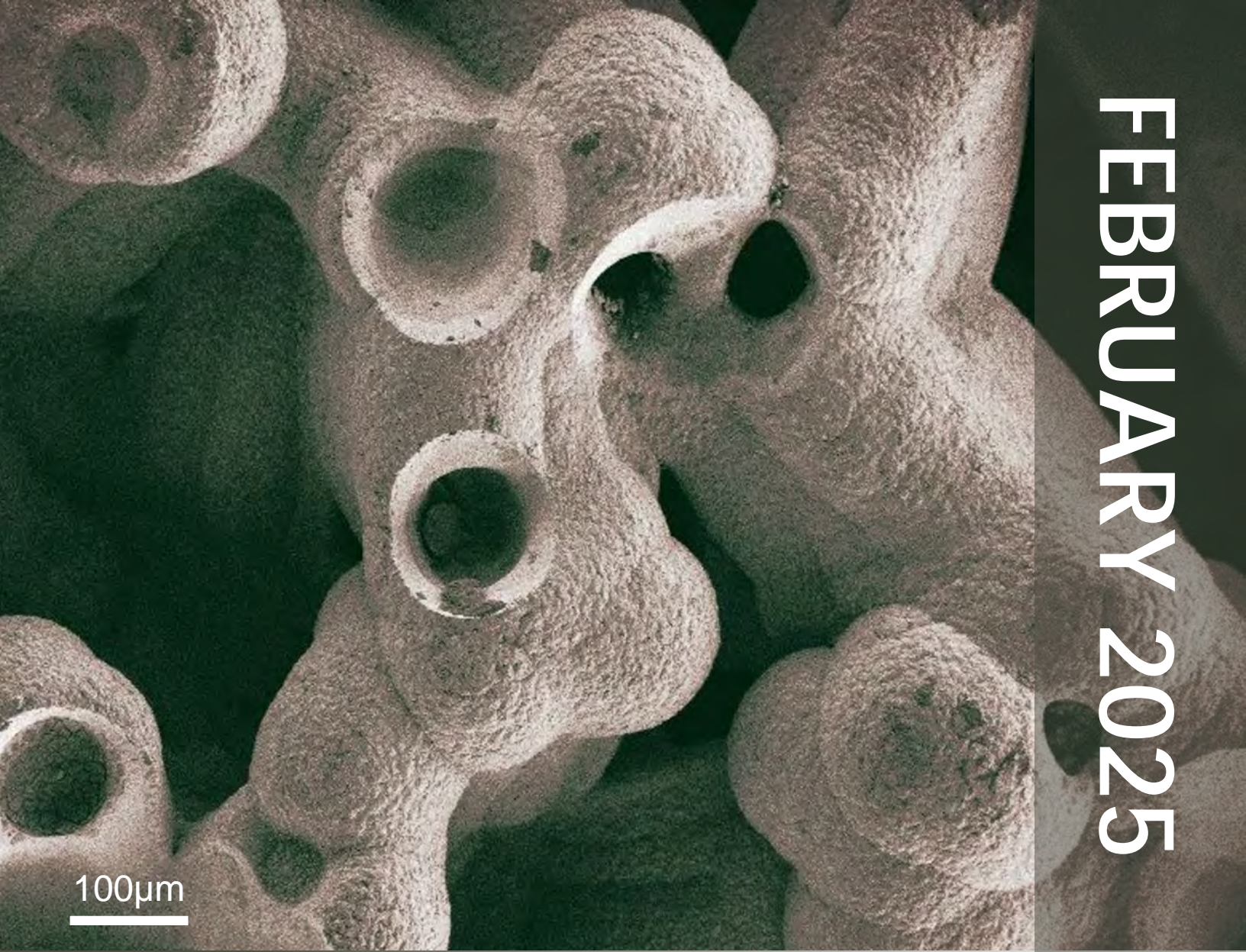
Lead Feathers (Christopher Whittington, Weiss group)

Rapid evaporation pattern of lead sulfide quantum dots that were suspended in chloroform
Imaged in VINSE facilities using the Zeiss Merlin Scanning Electron Microscope



Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 2025



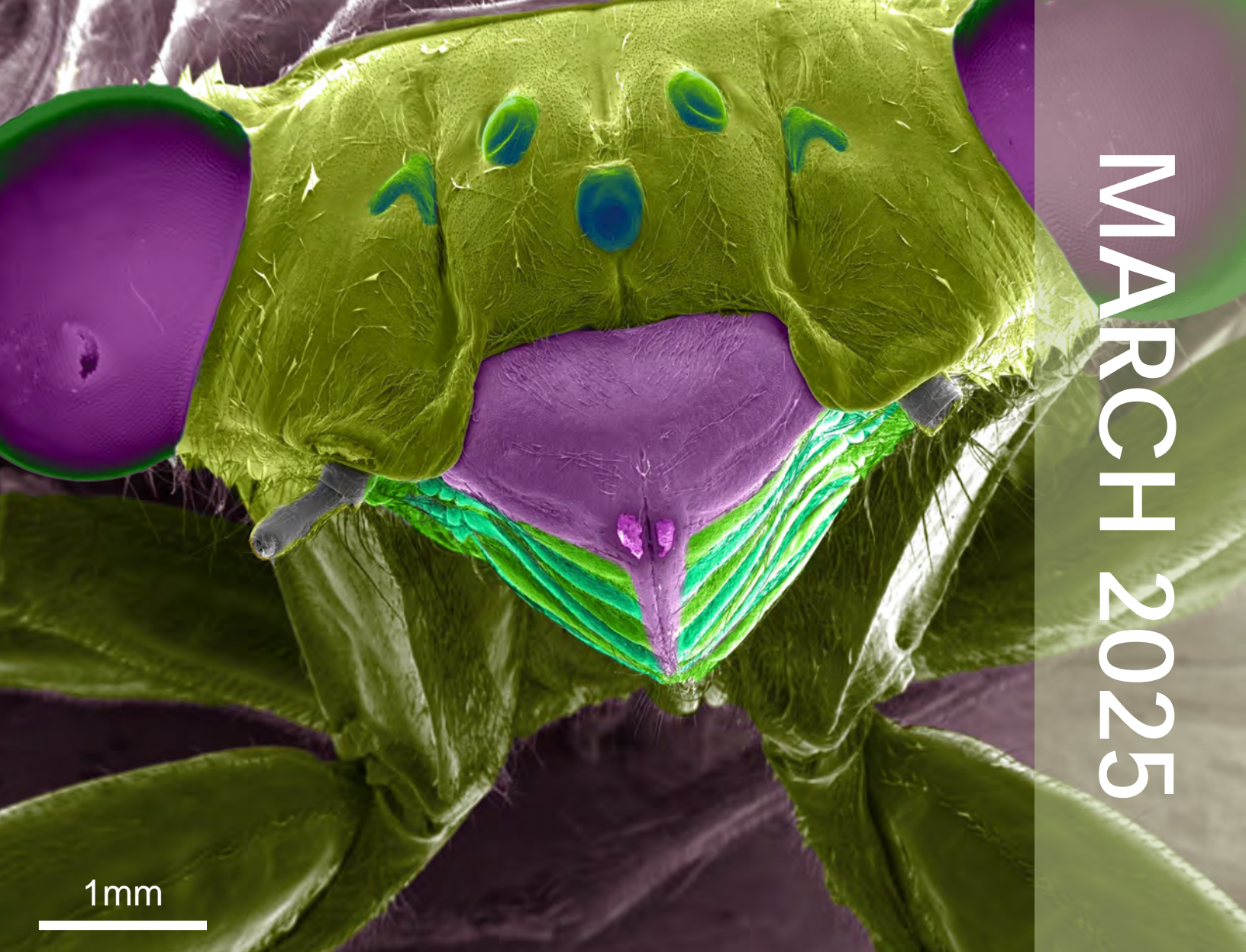
100µm

Porous labyrinth (Dandan Yin, Tennessee State University)

Deposition of $\text{Ni}(\text{OH})_2$ surface of nickel foam through electroplating technology
Imaged in VINSE facilities using the Zeiss Merlin Scanning Electron Microscope



Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	



MARCH 2025

Marvin the Martian (Kellen Arnold, Weiss group)

Brood XIX (13 year) Cicada carcass

Imaged by Dr. James McBride in VINSE facilities using the Merlin Zeiss Scanning Electron Microscope



Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

APRIL 2025

250µm

Sunken Starfish (Daniel Woods, Gonzales group)

Electron beam evaporated gold film lifted off of Parylene-C coated Silicon wafer
Fabricated and imaged in VINSE facilities using the Karl Suss MA-6 mask aligner and the Angstrom Engineering Amod multimode deposition system



Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5 VINSE Friends & Family Day
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY 2025



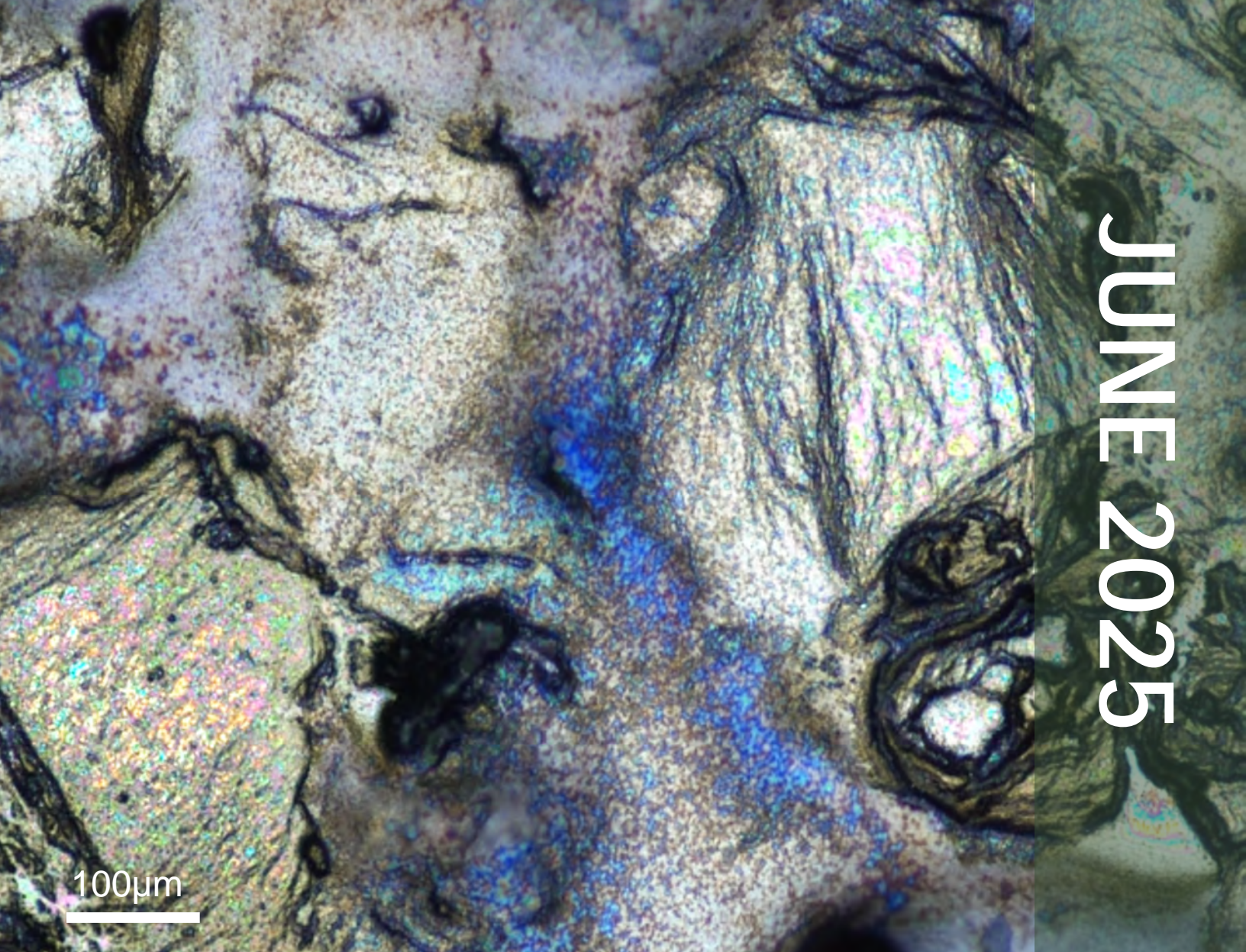
3µm

Pouring yourself into your work (Kellen Arnold, Weiss Group)

Surface and encapsulating layers of a photonic chip
Imaged in VINSE facilities using the Merlin Zeiss Scanning Electron Microscope



Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



JUNE 2025

100µm

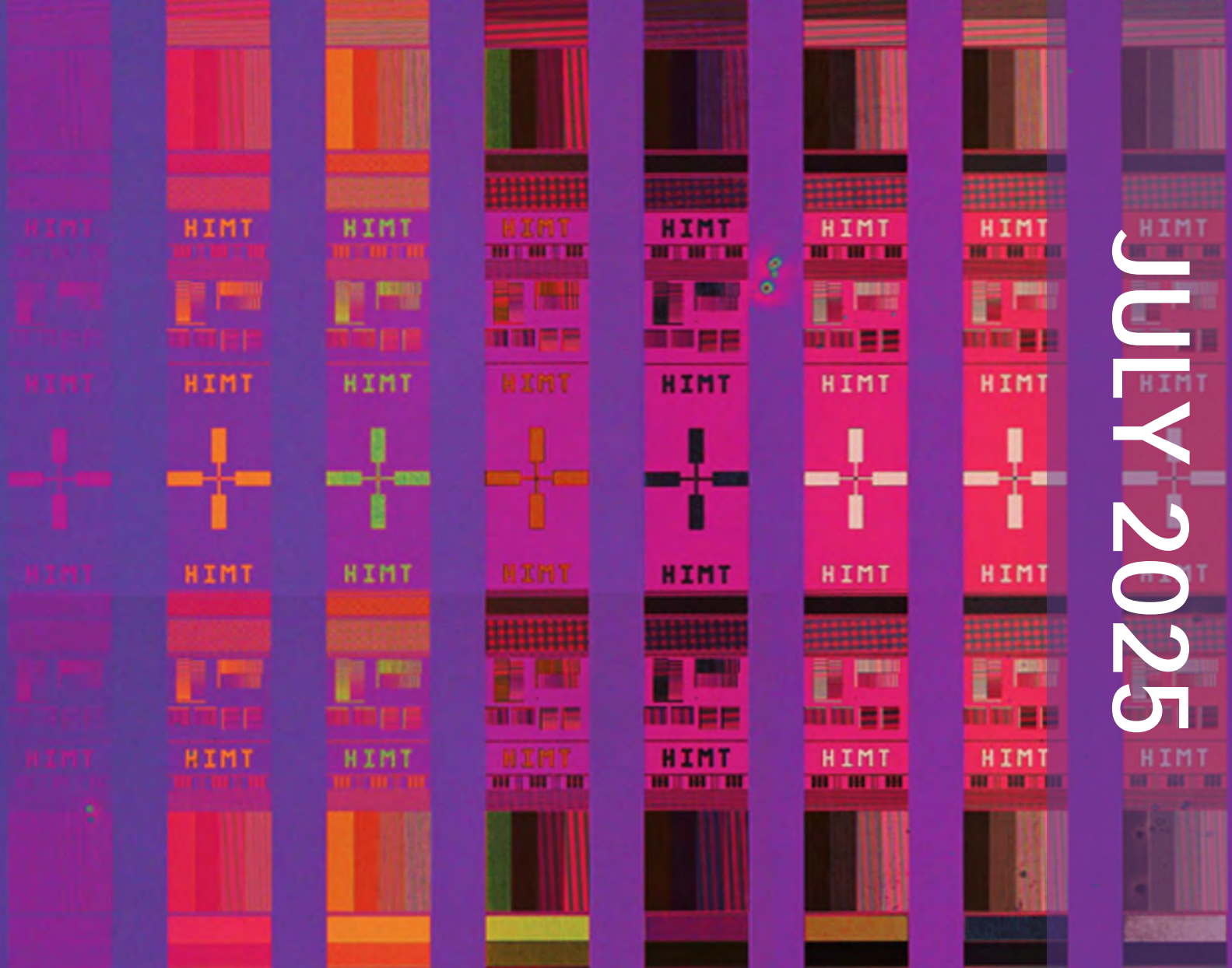
Nanotech National Park (Emma Bartelsen, Caldwell group)

Mega-sonicated molybdenum disulfide (MoS₂) flakes in IPA, drop casted on a SiO₂/Si substrate. Flake aggregation resulted in a variety of colors including hues of gold and blue. Thickness, morphology, and microstructure was evaluated with the VINSE atomic force microscope & Imaged with the VINSE Olympus Optical Microscope



Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY 2025



Turn Up the Power! (Owen Meilander, Ebrish group)

Photoresist patterned on Si wafer using range of different doses to find ideal exposure parameters. Fabricated and imaged in VINSE using the Heidelberg Instruments uPG 101 Laser Writer and the Olympus Optical Microscope



Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST 2025

Tunnel Vision (Christina Boyd, Valentine group)

Patterned Resist on SiO₂ on Si wafers

Imaged in VINSE facilities using the Nikon Optical Microscope



Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	5	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

SEPTEMBER 2025

20µm

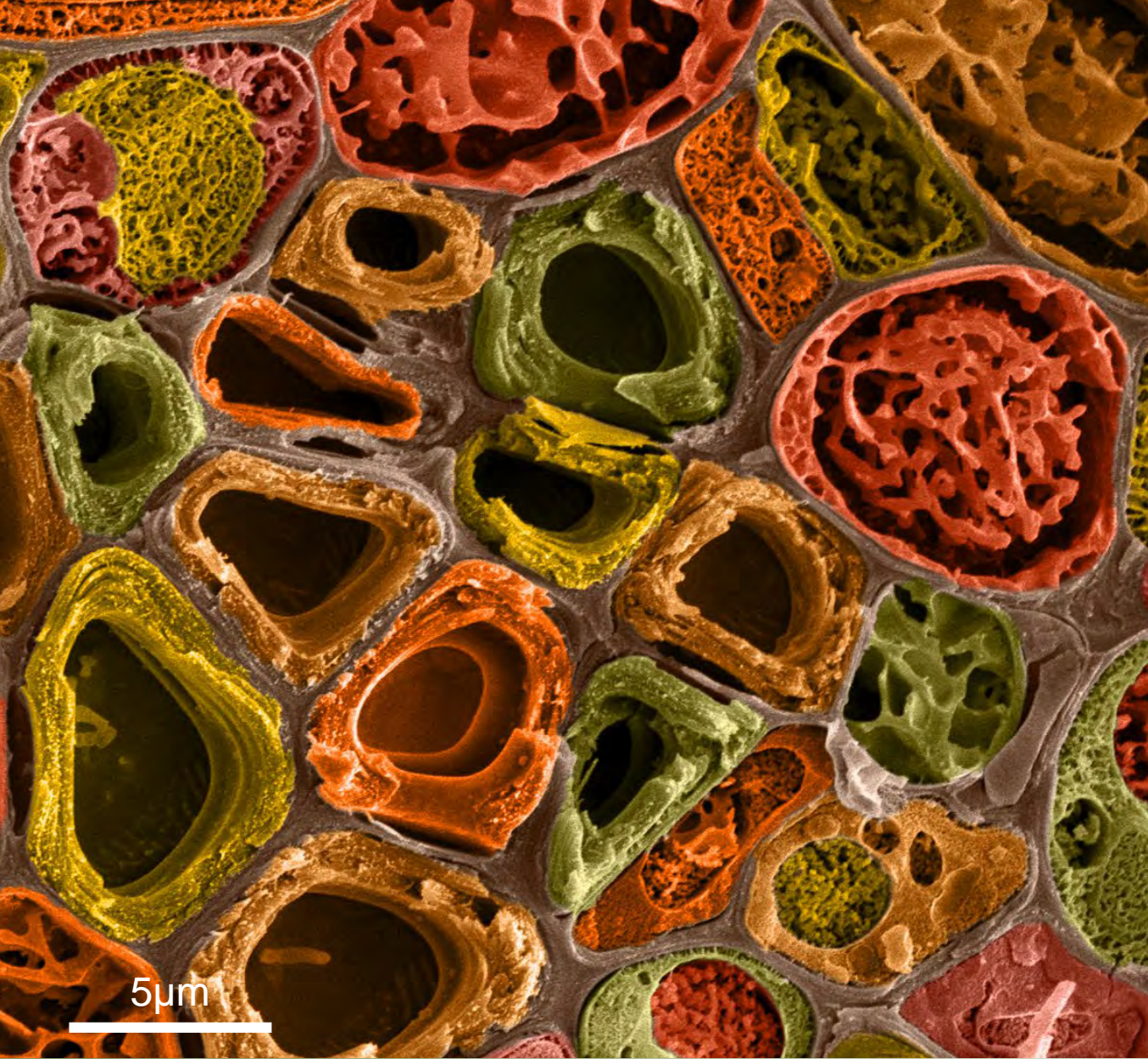
Electrode Kaleidoscope (Grace Adams, Gonzales group)

Microelectrode array patterned in photoresist

Fabricated in VINSE facilities using the Karl Suss MA-6 Mask Aligner and Imaged using the Olympus Optical Microscope



Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	28	29	30			



OCTOBER 2025

Autumn Leaf Frozen in Time (Kellen Arnold, Weiss group)

Magnolia leaf freeze fracture imaged at -140 C

Imaged in VINSE facilities using the Helios Dual Beam Focused Ion Beam Scanning Electron Microscope

Original image credit: Al Coritz of Electron Microscopy Services and James McBride



Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER 2025

20µm

Rain Puddle Reflections (Grace Adams, Gonzales group)

Etched parylene on silicon

Fabricated in VINSE facilities using the Labcoter® 3 Parylene Deposition System and the Oxford PlasmaPro 100 Cobra and Imaged with the Olympus Optical Microscope



Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13 Industry & Alumni Reception	14 VINSE 25 th NanoDay!	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

DECEMBER 2025

2 μ m

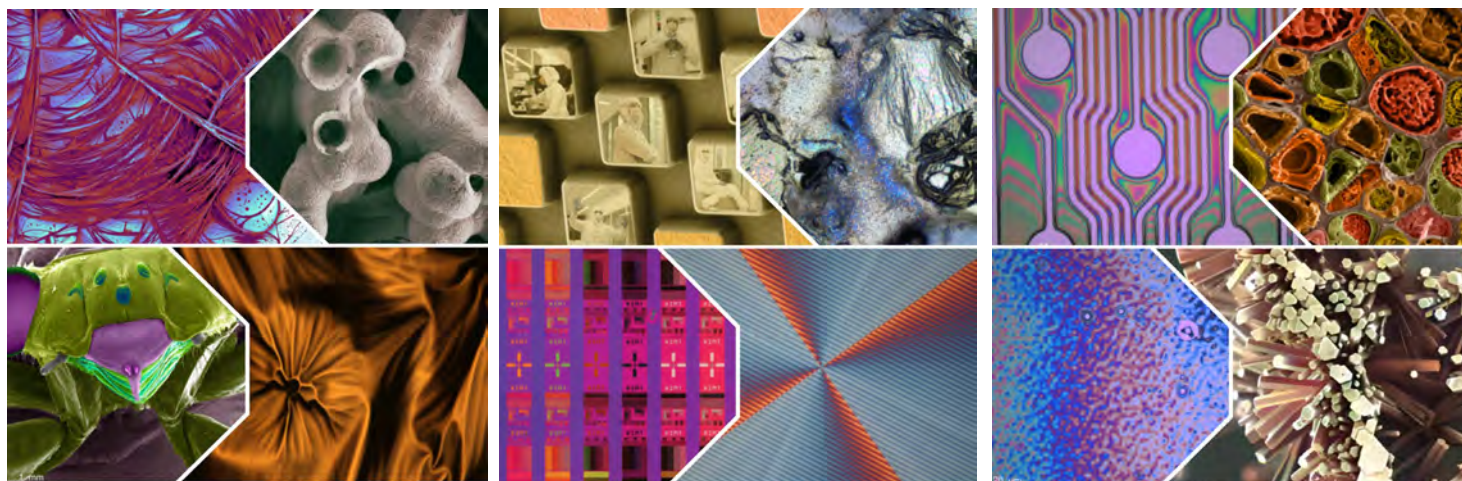
Noble Nanowires (Erin Burgard & Alex Klapowitz, Haglund group)

ZnO nanowires grown hydrothermally on GaN, image taken at the sample's edge
Imaged in VINSE facilities using the Zeiss Merlin Scanning Electron Microscope



Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

VINSE



CONTACT VINSE

Phone
615.322.1289

E-mail
vinse@vanderbilt.edu

Website
vu.edu/vinse

Cover photos (left to right)

1. October Sky Dahlias, **Hannah Brien**, Brunger group. Immunocytochemistry/fluorescence microscopy of human embryonic stem cells (hESCs) cultured in 500um microdiscs and stained for germ layer markers. Yellow - SOX2 (pluripotency/ectodermal marker), pink - brachyury (mesendodermal/primitive streak marker). Fabricated in VINSE facilities using the Jelight M42 UV Ozone Cleaner.
2. Imperfect Edge, **Erin Burgard**, Haglund group. Fabricated and imaged in VINSE facilities using cleanroom and the Olympus microscope
3. Galactic Goop, **Nicole Moehring**, Kidambi group. Imaged in VINSE facilities using the Zeiss Merlin Scanning Electron Microscope
4. Crystallization of Small Molecule Cisplatin, **Mariah Bezold**, Duvall group. Imaged in VINSE facilities using the FEI Tecnaï G2 Osiris S/TEM

