

*Flickering Through Micro to Macro:
Observing Entanglements
Within Participatory Art Practices*

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Abstract

This practice explores the unseen world of matter through a Scanning Electron Microscope SE(M), revealing details imperceptible to the human eye. Samples of atmospheric trace materials are collected during installation events, as a witting-unwitting exchange of material debris; skin cells, hair, building dust and viruses. The SE(M) observes by *feeling/seeing*, the atmospheric samples are transformed into sculptures holding the traces of the SE(M)'s observation. At the intersection of Art and Science (Scanning Electron Microscopy), this practice employs methods of intra-action, collection, dispersal, site activation, witting and unwitting participation all within a sympoietic methodology. In doing so, the intention is- to foster a greater connection and show the entanglements between, animals, matter and atoms from the micro to the macro.

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the Acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed:



13th of May, 2025

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My supervisors Chris and Mon for supporting me and helping manage all these ideas.

All of you have made-with me and created this exegesis.

Thank you all so much xx

Thank you to anyone who reads this, I hope you enjoy.

Table of Contents

<i>Abstract</i>	3
<i>Attestation of Authorship</i>	4
<i>Acknowledgements</i>	5
<i>Flickering Through Micro to Macro: Observing Entanglements Within Participatory Art Practices</i>	8
<i>Sympoiesis</i>	9
<i>Uku From Cyclone Gabrielle</i>	15
<i>Daphnia and the Scanning Electron Microscope SE(M)</i>	21
<i>Public Participation in the Microsphere</i>	26
<i>Collection Through Dispersal</i>	36
<i>'Arty Sciences'</i>	40
<i>The Gift that Keeps on Giving: Four Years' Worth of Flowers</i>	45
<i>Conclusion</i>	54
<i>Reference List</i>	56
<i>Bibliography</i>	57
<i>Image List</i>	58
<i>Handmade Paper List</i>	59

Note: The Cover of this exegesis is made from handmade paper, this paper was a residue from Talk Week (critique event) holding SE(M) images of paper made from Four Years' Worth of Flowers.

Flickering Through Micro to Macro: Observing Entanglements Within Participatory Art Practices

Flickering Through Micro to Macro: Observing Entanglements Within Participatory Art Practices could be described as a snowballing web, always growing rhizomatically and ever-cycling. Working with systems I value, such as reciprocity, attention, and care, guides my practice. The project warps and weaves with time, veering towards ‘material’ collaborators I encounter and who encounter me. These materials may include uku (clay) collected from the side of the road, ferns and bugs that have grown from the gathered uku, and recycled clay.¹ They may also include tools and materials readily available at AUT University including the Scanning Electron Microscope SE(M),² which enables a way of looking that exists on the microsphere.

My way of making flows congruently with space and time, working within structures that shape my environment: AUT University, work schedules, and the food eaten³ all reverberate and create this practice. Forever massing entropically as I go — more materials, more information, all to be re-processed back into the practice and given away, creating moments that allow for observations of material entanglements which, in turn, become entangled with all things: animals, matter and atoms.

1 In this exegesis, I will use the term ‘Uku’ to refer to clay gathered from the whenua, while ‘Clay’ will refer to commercially purchase clay that contains added minerals to enhance malleability. Uku comes with its own set of tikanga that influences the way in which I feel obligated to treat it, such as not selling any uku.

2 The Scanning Electron Microscope SE(M) is one of the most powerful microscopes in the world; it looks at matter in micrometers (μm) exploring a sample smaller than a ten-cent coin up to 500,000 times magnification.

3 For example, I am a bit of a low iron human. When I am low, I have less energy; my brain doesn’t work as well. I know I need to eat some red meat with a big source of vitamin C as this helps with iron absorption in the body.

As an artist practising in Aotearoa, I will incorporate the use of basic Te Reo Māori — from my schooling and what is used in the environment around me. Adopting tikanga when *making-with* uku allows me to engage in these practices respectfully as tangata tiriti.

I bring attention to the parameters of my research, such as working within an institution and engaging in postgraduate study with set guidelines for time, word count, etc. It would be naïve to express a desire for open and expansive cycling through space and time without highlighting that, within this context, things must be precise and what I am naturally drawn to do is often reined in by this environment.

Within this examiner’s package with the printed exegesis is a cup made from continually recycled clay (spanning back to 2022 when I first started recycling). As you read this document, I would like to offer you this cup for refreshments to stay hydrated and even comforted. Please make some tea with this cup. I have added some mint and sage leaves from my garden if you wish to make a brew. I hope you enjoy reading and looking through this exegesis document.



Image 1. *Handbuilt Tea Cups for Examiners*, 2025.

Sympoiesis

I was drawn to the term sympoiesis when little *Daphnia* bugs assimilated themselves into my art practice. I first noticed *Daphnia* in 2022 on the clay I was recycling;⁴ they had tiny orange bean bodies around 1mm in length and were creating little traces within the submerged clay. This recycled clay had seemingly created the environment for *Daphnia* to grow and survive. They are still with me today in my studio in a re-recycled clay bowl.

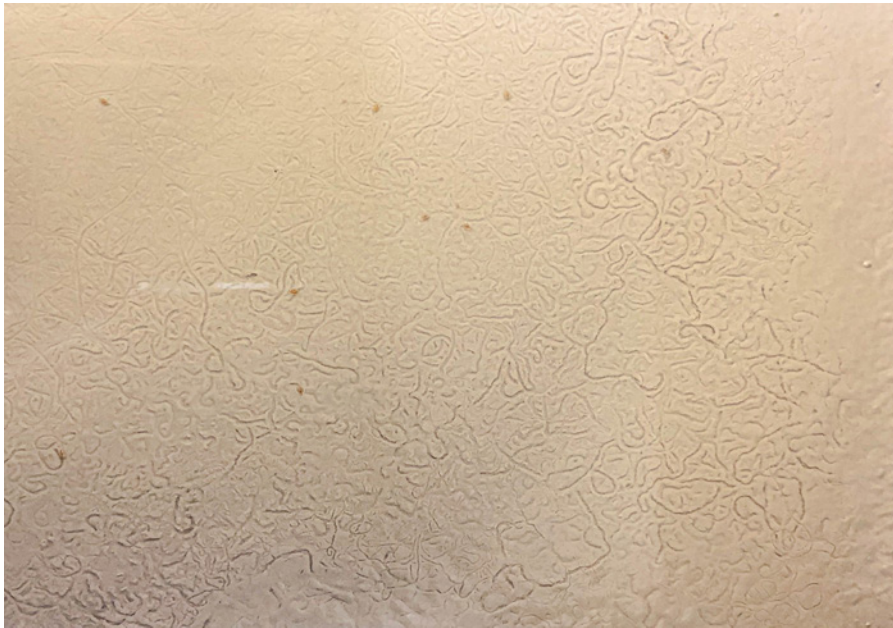


Image 2. *First Image of Daphnia Bugs in Recycled Clay, 2022.*
Taken 3 October 4:28 PM.

On 4 December 2024 I had an Exhibition Practice (EP) critique post humorously named *Daphnia's Third Birthday* where I relocated *Daphnia* in a hand built ceramic bowl. For the EP, I made 14 new ceramic vessels, some were brick red clay and re-recycled clay. All of these vessels were made to be Christmas presents. All vessels were placed on the ground on top of A3 sized pieces of handmade paper I had made from pulping A0 SE(M) images of the *Four Years' Worth of Flowers Paper* I handmade and observed with the SE(M). Upon reflection I realised this was like a third birthday party for the *Daphnia*; their first was when they were shown three years previously in my second year BVA exhibition titled *Re Re Re*. Three years forward, they are installed in the same space as a nod to the past with all these offerings; a photopolymer etching of an SE(M) image from the *Four Years' Worth of Flowers Paper* was printed onto the recycled *Talk Week A0 Printed SE(M) Images Paper* holding SE(M) images of the *Four Years' Worth of Flowers Paper*. This ephemeral Photopolymer Etch was given away as a gift to the public who came and viewed the work.

The recycling methods I use in my practice stem from being conscious about what I am creating and adding to the world, wanting to have a semi-re-digestible and re-cyclable practice. At the end of the day, if there is excess material, it can feed and grow into a new project as a continuation of a cycle. I care deeply about our environment and working with cycles, and re-recycling allows me to practise this care while also folding into my practice the nature of materials moving through these time cycles; a genealogy or whakapapa process.

⁴ This clay had already been recycled by the AUT Wet Labs. I was melting scrap PLA (Polylactic Acid- used in 3D printing) into these clay molds, to release the PLA sculpture. I would submerge both in water, and re-recycle the clay.



Image 3. *MVA Students Celebrating Daphnias's 3rd Birthday*, photo courtesy of Monique Redmond, 2024. Ceramic Vessels, handmade paper and Daphnia.



Image 4. *MVA Students Celebrating Daphnias's 3rd Birthday*, photo courtesy of Monique Redmond, 2024. With take-away photopolymer etch ephemera.



Image 5. *Daphnia Bugs in Ceramic Bowl*, photo courtesy of Monique Redmond, 2024.



Image 6. *Photopolymer Etching Ephemera*, 2024. SE(M) image made from *Four Years' Worth of Flowers* paper.

Some of the paper in this project spans back to our 2023 *Spooky Action at a Distance* exhibition. The clay from 2022 when I first started recycling. It's like a perpetual soup, always holding small fragments from the last recycling and last layering. For example, during the papermaking process, the first few sheets of *Talk Week Printed SE(M) Images Paper* picked up the *Four Years' Worth of Flowers Paper* remnants that had been left on the screens. This practice is always holding glimmers of past processes transferred into the future.

Within the notion of glimmers, sympoiesis allows me to observe these glimmers illuminate themselves and surrounding relations. Sympoiesis is defined by Donna Haraway as, "collectively producing

systems that do not have self-defined spatial or temporal boundaries. Information and control are distributed among components. The systems are evolutionary and have the potential for surprising change".⁵

I created an equation to simplify sympoiesis to:

Making-with: Sym: with + Poiesis: to make = making-with

During this exegesis, I will flick⁶ between the two terminologies *making-with* and *sympoiesis*. It is important to my practice that this terminology is easily accessible, and this flickering allows each term to be used in certain contexts in which they will shine.

I am enchanted by the idea that my making is not just me; all materials and matter around me intra-act. Intra-action is a term coined by Quantum Physicist Karen Barad that replaces our usual understanding of 'interaction'⁷ and which, "necessitates pre-established bodies that participate in action with each other. Intra-action understands agency not as an inherent property of an individual or human to be exercised but as a dynamism of forces".⁸ Therefore, we are all made up of the intra-actions we engage in, just by existing. How much sleep we had the night before, the light in the space we occupy, what viruses and dust are floating in our shared

5 Donna J. Haraway, *Staying with the Trouble Making Kin in the Chthulucene* (Durham: Duke University Press, 2016), 58-98.

6 Flickering, flicker, and flick, for me, is a fast-paced drawing of attention; when light flickers, that space is highlighted and draws attention to, very briefly, what is there. To flick between is that same drawing of attention but on multiple themes, ideas, contexts, spaces and materials.

7 For example, I had previously thought of interaction as how I would interact with other humans or animals, not recognizing the levels of non-human intra-actions.

8 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press, 2007), 141.

atmosphere, and how hydrated we are – these all intra-act within and upon our bodies. For example, we leave trails of dust and skins cells that then assemble and combine with the building’s dust on the floor. This fascination led me to mount on the wall of my studio an atmospheric SE(M) sample. This sample facilitates connecting and *making-with* what is in the studio environment for the duration of this postgraduate study. As discussed below, the sample even collects our breath as we talk which can be visualised by the SE(M).



Image 7. *SE(M) Atmospheric Sample*, 2024. Mounted to the studio wall. W 1.5cm x H 2cm.

Barad’s intra-action lends itself to sympoietic methodology. Contextualising this form of thinking, adding another layer of reference, this in turn deepens my understanding of the intertwining and entangled relationships between all things. I am working within a university structure, and living in this capitalistic information age. Both shape how I create, just as the *Daphnia* are making and living in the confines of a re-cycled clay bowl made by my hands. In unison the *Daphnia* and I are intra-acting within these structures. American Philosopher Alva Noë explores how our life, art, and culture are entangled,⁹ creating arguments for the influence of art and culture as organising systems. For example, images and observation play a role

⁹ Alva Noë, *The Entanglement: How Art and Philosophy Make Us What We Are* (Stanford University Press, 2023).

in how we mimic and learn to dance. Generally, we are unaware of how vital entanglements are because we are part of them.

There are many words to describe this connection between all things (animals, matter and atoms). The essence of an entangled life shines no matter the time or place in history. I will flick through a few: Ecology, the study of how the environment intra-acts with the animals within it; Epigenetics, the study of the environment’s intra-action on gene expression; Quantum Entanglement, which shows that when particles are entangled what happens to one particle is instantly reflected in its entangled part, transcending space and time.¹⁰ And sympathetic magic, the belief that traces created by the body hold a sympathy of connection to the maker of the trace. Aotearoa artist and writer Chris Braddock explores these operations of sympathetic magic in “items of clothing and impressions left by a body, including the possibility of injuring footprints in order to injure the feet that made them.” As well, he mentions “Pythagoreans that believe in rising from the bed you should smooth away the impressions left by your body on the bedclothes”.¹¹

Braddock’s work observes sympathetic magic, and introduces us to similar operations in contemporary artistic practices. This gives rise to his notion of ‘unwitting participation’ which has a correlation with *making-with*, a sympoietic methodology. Methods of *making-with* allow for a flickering through my life and creative practice, noticing what appears in my presence to be *made-with* wittingly and non-wittingly. I will return to these ideas of sympathetic magic in the context of the 2023 group exhibition *Spooky Action at a Distance*.

¹⁰ “What Is Quantum Entanglement? NASA Science,” NASA, April 2, 2025, <https://science.nasa.gov/what-is-the-spooky-science-of-quantum-entanglement/>.

¹¹ Christopher Braddock, *Performing Contagious Bodies*, (New York, Palgrave Macmillan, 2013), 5.

I have been *making-with Daphnia* since 2022. As already stated, I found them in the bin of clay I was recycling at the time. I often ask myself where my practice would be if I had not paused, allowing for the time to inquire into these wandering bugs. My first reaction was one of slight disgust; if I had reacted on this first impression, the clay would have been 'biffed'.¹² I am committed to a way of practising that is intentionally open, and receptive to the changes in the environment. This intertwines my methodology with my practice.

Time is vital in sympoietic making. I find that when moments of surprising change occur, it seems to have come from giving the materials their own time and space. Barad talks of *spacetime mattering*, a term giving emphasis to how time and space are also in action with matter.¹³ This allows for the observation that materials are in a process of their own making as much as I am making them. This practice is processual; I am actively observing and allowing for material changes to arise, and I am being *made-with*.

If I had quickly recycled the clay, I would not have found the *Daphnia*, just as the uku gathered from Pakiri is now growing ferns. If I had not let it sit for months, those fern seeds would not have had the environment they needed to sprout and grow. All I can be is open and observant to these changes and participate in *our*¹⁴ making (and re-making and on and on).

A flickering of sympoietic making is Aotearoa artist Natalie Tozer's 2021 *Companion Pieces*. Tozer buried canvases in the whenua leaving

¹² Biffed, as in, to throw away.

¹³ Karen Barad, Malou Juelskjaer and Nete Schwennesen, *Intra-active entanglements: An interview with Karen Barad*. (Published online: Research Gate, 2012), 20.

¹⁴ Our making refers to the entangled and intra-active ways in which we shape and are being shaped by the environment we inhabit.



Image 8. Natalie Tozer, *Companion Pieces*, 2021.
Canvases buried in artists garden.

them for a time, as well as feeding sheets of paper to her snail farm, allowing the environment, animals and time to *make-with* and intra-act creating these pieces of art. Tozer generated an environment for surprising changes to occur, emphasising the need for time in her art practice. She states: "There are many changes in our environment that are not perceptual to the human eye; they hide in objects, decomposing and recomposing only to be observed over vast time."¹⁵ Tozer creates an environment of intra-active participation between animals, the environment and time.

Another flicker of this entangled *making-with* in *spacetime mattering* is Mexican artist Gabriel Orozco's 1992 *Yielding Stone*, where Orozco wheeled a large ball of plasticine equal to his own weight (36.8 x 39.4 x

¹⁵ Natalie Tozer, "Natalie Tozer: Companion Pieces", Natalie Tozer, 2021, 13.4.25, <https://natalietozer.com/project/companion-pieces/>.

40.6 cm)¹⁶ along the streets of New York before placing it in the gallery. As the ball was tacky it picked up debris from the streets as well as indentations from drainage grills. Orozco states:

the beginning of the work is also the end of the work.
That's just what it is- a mound of plasticine. Every time you see it, it's going to be damaged, it's going to be fingerprinted, it's going to be different. It is a non-definitive proposition, the opposite of a static monument but sculpture as a body in motion.¹⁷

When placed in the gallery, Orozco asked people to touch and make their own impressions onto the ball. Thus, when a participant would touch the *Yielding Stone* their impression would remain and they also would have picked up some debris from the outside world or what the last person had left. This confluence of exchange saw the *Yielding Stone* absorbing and incorporating into its matter all of the touches it experienced. While the touches, human and non-human, held some small pieces of the yielding stone's matter or what the form itself had picked up, this intra-action changes all participants. Each person experienced a slightly different yielding stone as through time this stone changed and morphed. It is in-action creating a continual record of all these intra-actions.

For the duration of my postgraduate study *The Atmospheric SE(M) Studio Sample* has been actively *making-with* our *spacetime mattering*, collecting debris from our studios, and students making, including from each other's bodies and even our breath as we talk. This takes *Yielding Stone* to levels of quantum entanglement.

¹⁶ Gabriel Orozco, *Yielding Stone*, 1992 | MOMA, accessed April 28, 2025, <https://www.moma.org/collection/works/142595>.

¹⁷ Gabriel Orozco, *Gabriel Orozco* (New York: Museum of Modern Arts, 2009), 74.

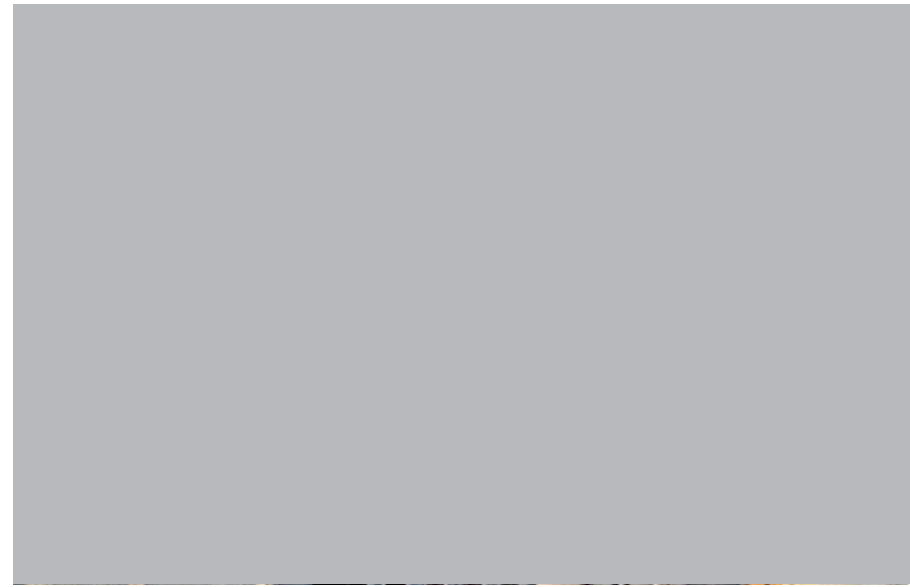


Image 9. Gabriel Orozco, *Yielding Stone*, 1992. Plasticine ball on New York street.

At one point the sample was 'booshed'¹⁸ and rolled around the studio floor for a day, picking up a lot of dust. What is collected on the sample is a *making-with* that is facilitated by me. I create the environment to be able to record, however the SE(M) and the environment, and inadvertently me/us, intra-act and *make-with* the sample. The resulting images from this sample include organisms, salt crystals, building dust, and pollen, which will be observed and discussed later.

¹⁸ Booshed, is to knock off, pronounced bushed kind of like a softer pushed.

Uku from Cyclone Gabrielle

In 2022, in a moment of synchronicity, Cyclone Gabrielle ripped through the north motu, the week after my grandma Manon Gabrielle Trussell-Cullen had passed away. My mother said it was fitting that the cyclone was named after her as she was a force.

When the roads opened again, my partner and I went up to Pakiri and Omaha to go surfing, passing by huge mounds of uku scattered and collected on the side of the road. The word uku comes from the atua (gods/ spirits) Hine-uku-rangi, the granddaughter of Ranginui and Papatūānuku.¹⁹ Seeing these mountains of beautiful uku waiting to be collected and dumped in some landfill, I saw an opportunity to gather some of this uku to *make-with* in the future.

I brought the uku to the studio and left it to rest in its fish bin of water for over a year, never quite getting to *making with*; always another project pulling me away. In the summer holiday of 2023-2024, I left the bin topped up with water and returned in the New Year to beautiful leaf sprouts. Over this last year and a half, I have slowly nurtured and grown and kept them topped up with water. What were once sprouts are now delicate ferns and mosses, all grown from this gathered uku.

These ferns are still in the bin, waiting for the right moment to be activated and gifted on; I impress the need for time and fluidity within this making. If I hadn't waited so long these ferns would not have had the environment to grow. I was also gifted some uku from my studio friend, Te Ra Awatea. She gave me a bag of uku from her kainga

¹⁹ Ngarino Ellis, *Sight Lines: Women and Art in Aotearoa*, (Auckland, Auckland University Press, 2024), 7.



Image 10. *Collecting Uku*, 2023. Collecting uku from State Highway 1, 28 February 9:04 PM.



Image 11. *Baby Leaf Sprouts*, 2024. 26 January, 12:24 PM.

(home) on a farm in Huapai. I made a vase for her mother's birthday from that uku; I topped the rest of the uku up with water to recycle, and one tiny sprout shot itself out, surprise, surprise. It's currently watered in the studio, with both moss and plants cohabitating and growing.

Working within frameworks of tikanga, I only take what I will use, never digging the whenua (all uku I have collected has been found on the side of the road or given as gifts). And I do not profit (monetarily) from the whenua; all of the vessels I make containing uku are gifts.²⁰ Upholding tikanga feels like a reciprocal exchange with Papatūānuku;

²⁰ Alex Tūkariri-Wong, "Gathering and Processing Uku," He Kapunga Oneone, accessed June 9, 2024, <https://www.kauaeraro.com/tikanga/gathering-and-processing-uku>.

she supplies the uku from happenstance (nature and friendship), and I *make-with* from gratitude and gift forward. It is interesting to think of reciprocity in context of a common saying nowadays, "to pay it forward" – not needing or invoking any form of indebtedness from kindness.

Uku is the smallest particulate matter of earth; mountains, boulders, rocks, pebbles, sand and silt all have to crumble until they become uku.²¹ Uku holds traces and minerals from millions and billions of years. In 2023, when Asteroid Bennu was mounted by Nasa scientists, they gathered a small sample, 120 grams of the asteroid, and brought it back to earth to examine. The scientists found an "abundant presence of water bearing clay minerals"²² as well as the bases for DNA structure. They theorised that asteroids would have hit earth bringing minerals, salts and water to it. That then created our life.²³

I like to think of Papatūānuku and Ranginui, the Earth Mother and Sky Father, both hold what creates life, earth and water. It is amazing to me that when I let these two things rest in the studio, life forms in this nurtured environment. Even when I am recycling paper and I leave it too long, organisms develop on the top of the water. I feel this is a *spacetime mattering*; all are *making-with* each other.

²¹ Schmitt Thompson, Ali Ward, host, "Geology (ROCKS) Part 1" Ologies (podcast), September 14, 2022, accessed June 8, 2023, <https://www.alieward.com/ologies/geology> 8:11-9:50.

²² "NASA's Bennu Asteroid Sample Contains Carbon, Water- NASA." n.d. <https://www.nasa.gov/news-release/nasas-bennu-asteroid-sample-contains-carbon-water/>.

²³ Rebecca Morelle, "Bennu Asteroid Contains Building Blocks of Life, Say Scientists," January 29, 2025. <https://www.bbc.com/news/articles/c7vd1zjlr5lo>.



Image 12. *Baby Leaf Sprouts First New Leaf*, 2024. 11 March, 2:41 PM.

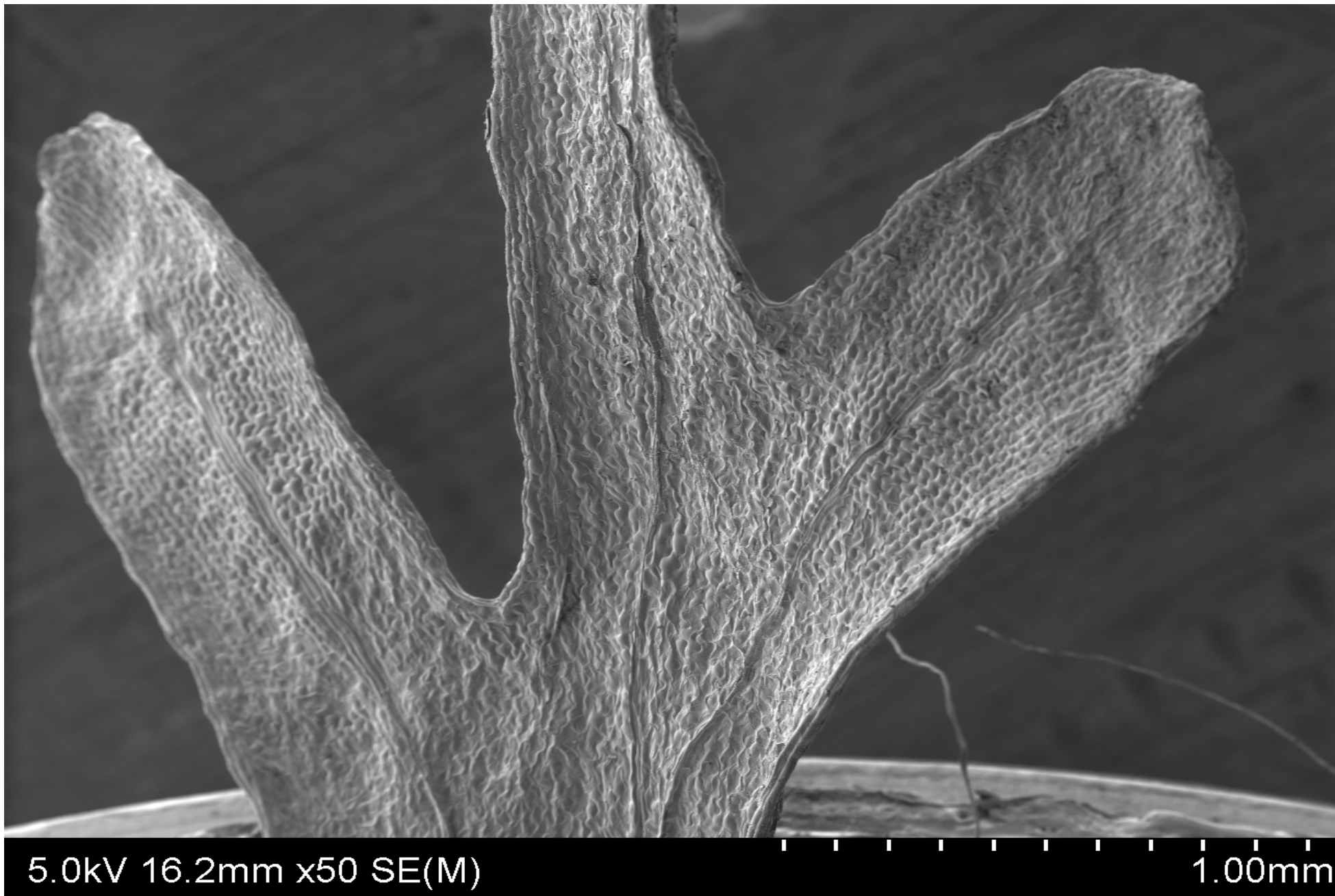


Image 13. *Ferns Grown from Pakiri Uku, 2025*. SE(M) image, 14 April, 1:18 PM.



Image 14. *Recycled Clay Your Cup is Made from*, 2025. SE(M) image, lots of Diatoms, 10 March, 10:09 AM.

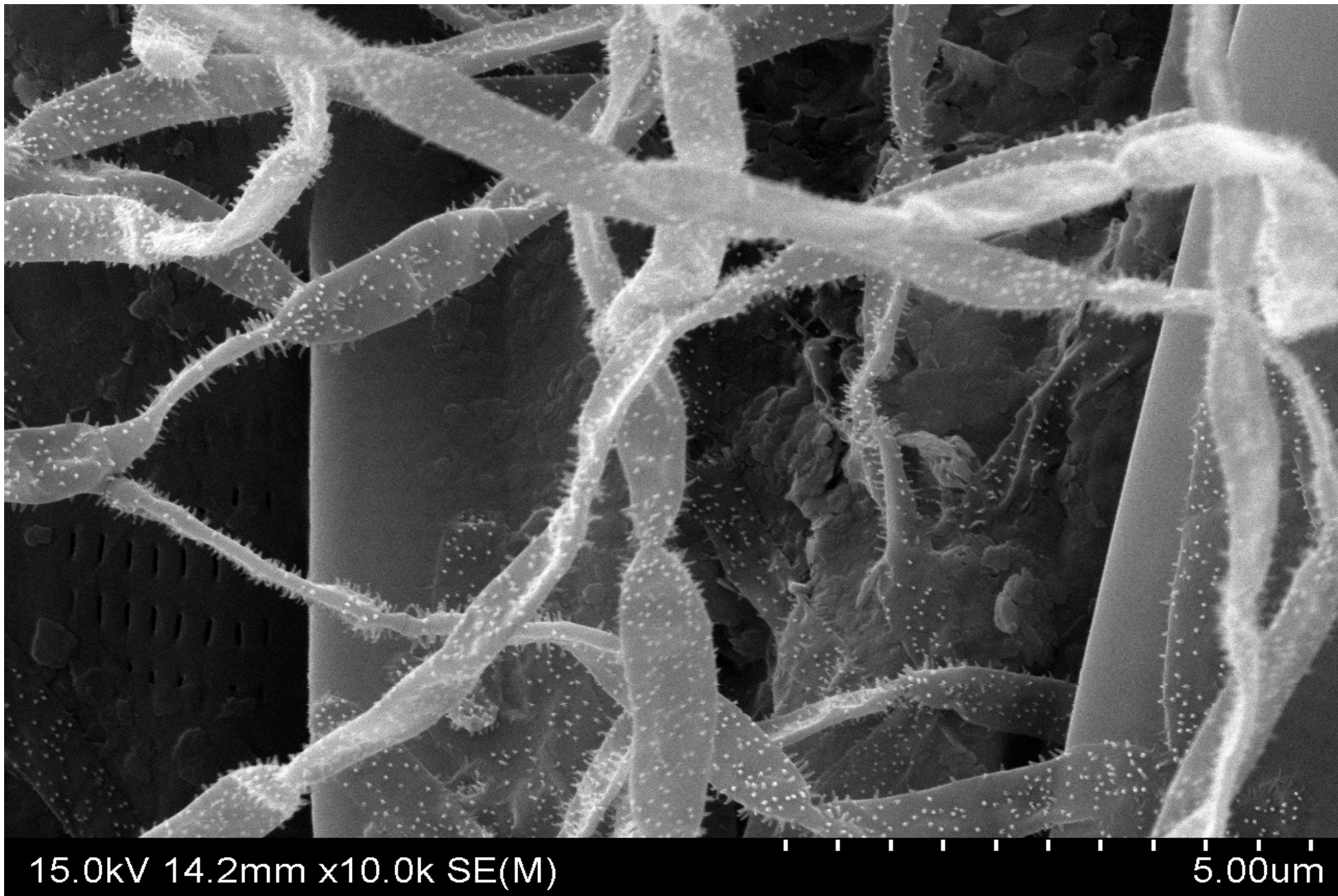


Image 15. *Recycled Clay Your Cup is Made From*, 2025. SE(M) image, organisms, 10 March, 10:09 AM.

Daphnia and the Scanning Electron Microscope SE(M)

Ka mua ka muri is a Māori whakatauki (proverb) that means “walking backwards into the future.”²⁴ The Māori concept of time is circular and cyclical versus some Western linear time structures. As my practice is processual and *makes-with* time, I hope to incorporate *ka mua ka muri* for this section of the exegesis, taking you through where I have been to then look forward to where I am going. I have already introduced *Daphnia* and will now outline the Scanning Electron Microscope SE(M).



Image 16. *The Scanning Electron Microscope SE(M)*, AUT University, 2025.

²⁴ Jack Gray, “Ka Mua Ka Muri- Walking Backwards into the Future,” *The Big Idea*, accessed April 27, 2025, <https://thebigidea.nz/stories/ka-mua-ka-muri-walking-backwards-into-the-future>.

The SE(M) beams electrons down at a sample, and based on where the electrons bounce off, the SE(M) collects this data and constructs an image for us to see; I call this a *feeling seeing*. This is somewhat like a pin screen you may have played with as a child, placing your hand on a rectangular surface holding many metal pins, allowing gravity to press the pins downwards forming a relief in the shape of your hand. The images the SE(M) creates are a bird’s eye view from the top down.

I brought three *Daphnia* to the SE(M). I had to fish them out from their fish bin habitat of clay water, choosing the bigger, slower ones, suctioning them up with a pipette to douse them in acetone, instantly killing them and drying out their bodies.²⁵ They were then taken to the SE(M) Lab to be sputter coated with a platinum argon gas. During this process, the gas creates a purple hue. This allows the sample to be covered in the lightest shell of platinum, letting the electrons bounce off the tiniest grooves. Gold can also be used in this process, but is a larger element in structure, resulting in slightly less definition in the images than when you use platinum.

From here, the sample is placed in the microscope which is larger than a four-drawer filing cabinet and connected to a desk with a computer monitor. The sample is a disc shape, smaller than a ten-cent coin, with a little metal rod coming out from the bottom allowing you to hold it without touching the sample. The sample is vacuum-sealed into the SE(M) by Dr Yuan Tao, the SE(M) technician.

²⁵ I did not feel good about this. I thanked them for their contribution to my art and science, and reminded myself that sometimes, to make a cake, you must break a few eggs.

She tinkers with the rate of the beam, and then you start to see an image form on the computer screen. On the stage controller, I spin a little ball (just bigger than a squash ball) that works as a mouse to move around the sample. There are controls to zoom in and out, change the exposure, brightness and focus, before taking a photographic image, each taking around twenty seconds.

I saw the *Daphnia*. Their little bodies looked like beans with these tiny wisps of legs coming out of them. When we zoomed in, we could see salt molecules underneath hair follicles and some fungi that had started growing on one body. Witnessing so much 'world' held on one tiny body was incredible. After recording the *Daphnia*, I looked at the clay I had been recycling, noticing each clay's pattern. Some clays can look like rose petals, all squiggly and bunched, whereas others, such as the porcelain, are like leaves in a book, rigid and uniform. I always find special surprises like quartz or salt crystals, stray hairs, and fibers contained within each sample. I also started to notice contamination; no material was simply one thing. Everything held and incorporated other little bitties;²⁶ the samples hold matter like hair from either me or someone else in my studio, leading me to observe how we all entangle together in this microscopic world.

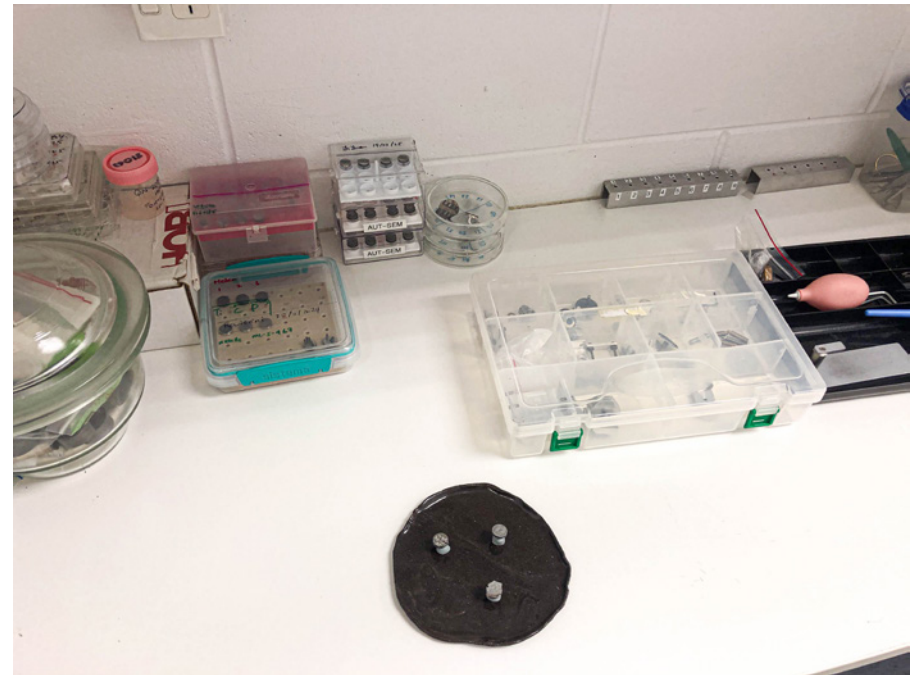
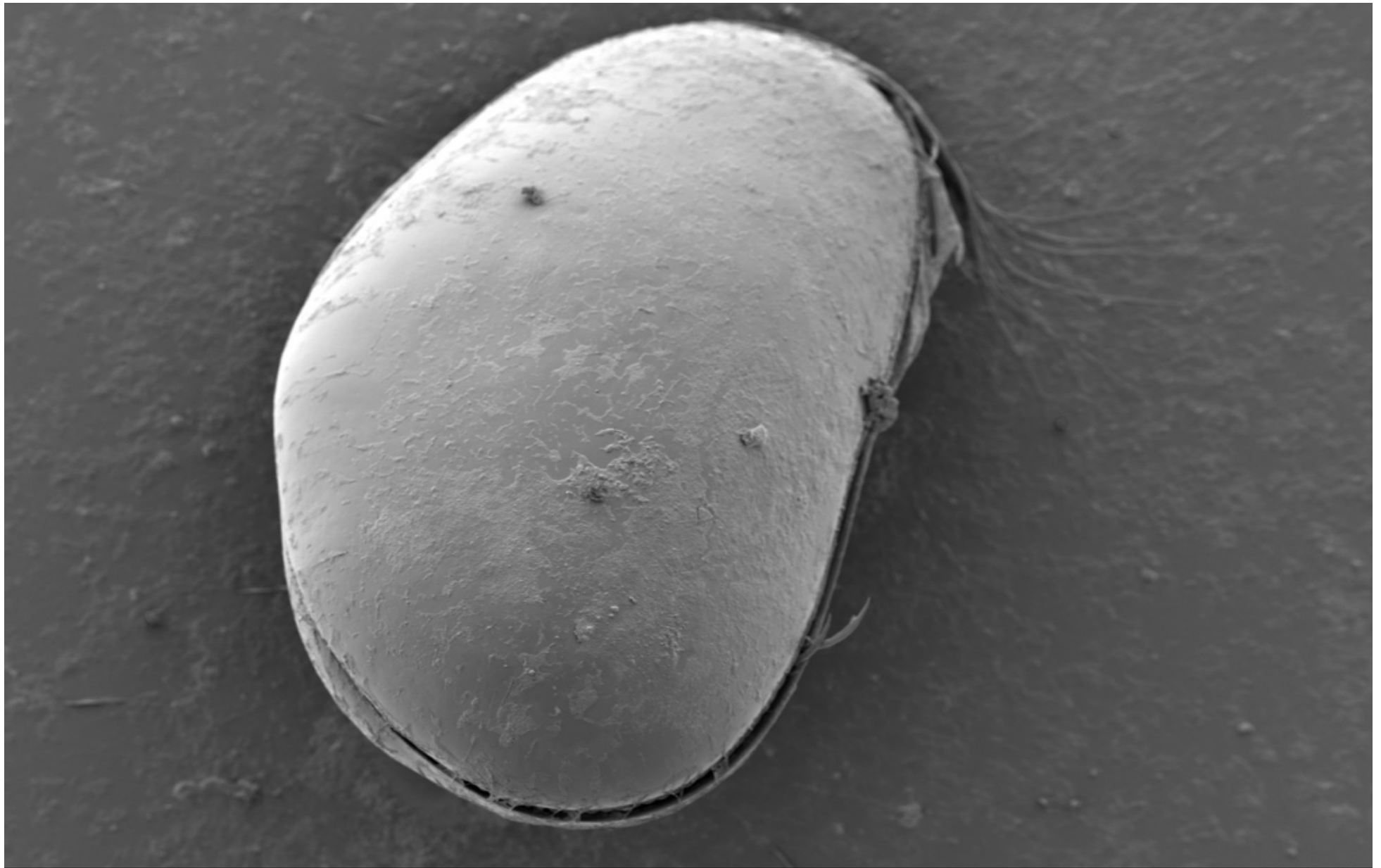


Image 17. *Methods of Transporting SE(M) Samples*, 2025. Ceramic plate handbuilt from recycled clay, blue-tac and SE(M) samples.

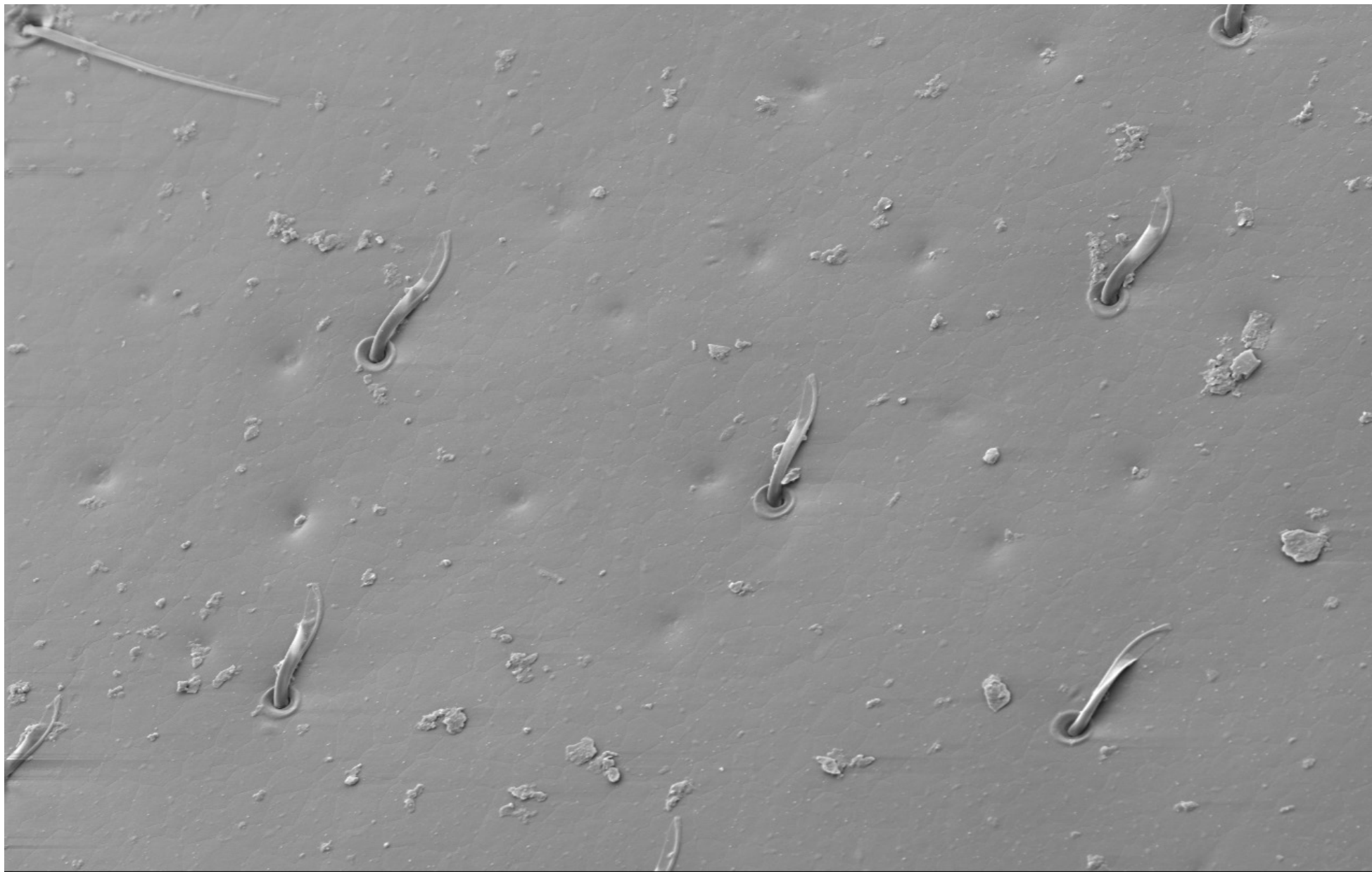
²⁶ The word 'bitties' is a project term I use to describe assortages, odds and ends: all the little bits together are bitties. I tend to interchange between bitties and itty bitties within this exegesis.



5.0kV 15.3mm x70 SE(M)

500um

Image 18. *Daphnia* observed with the SE(M), 2023. 29 March, 12:36 PM.



5.0kV 15.6mm x1.00k SE(M) 50.0um

Image 19. *Daphnia* Hair Follicles, 2023. SE(M) image, 29 March, 12:36 PM.

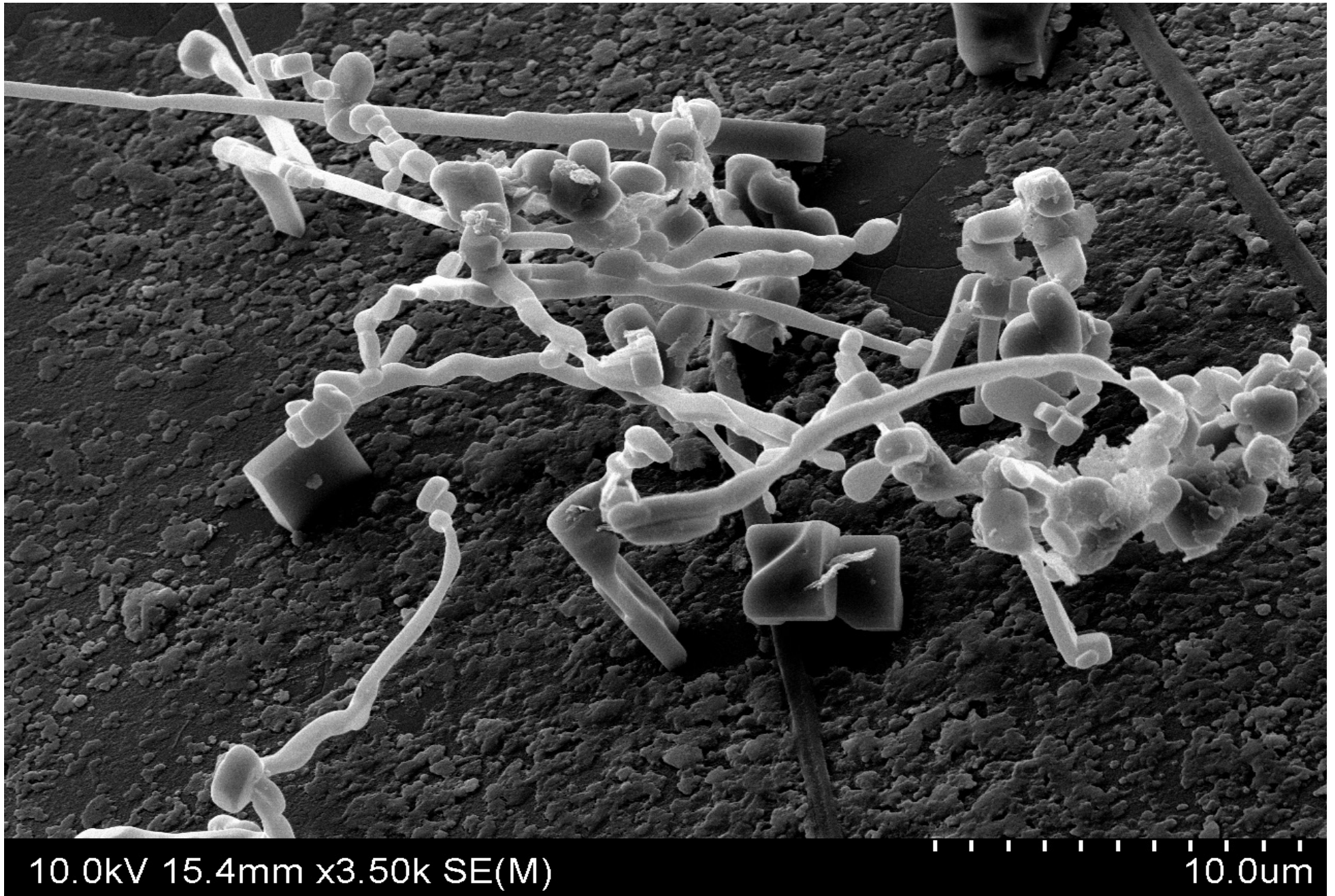


Image 20. *Fungus Found on Daphnia*, 2023. SE(M) images, 29 March, 12:36 PM.

Public Participation in the Microsphere

In my final year of undergraduate (2023), we held a group exhibition titled, *Spooky Action at a Distance*^{27,28} at the Old Folks Association in Central Auckland. At the time, I made a 'collection bowl' out of the recycled clay that I had looked at under the SE(M). This bowl was chalice-like in shape with a stem and flutings and impressions from my fingertips around its body. Fired to a glaze temp of 1100°C, after firing I added some of the recycling slip (watery clay mixture) from my studio to the bowl. I then invited people to make an offering such as hair, breath, pocket lint, or spit into the vessel, hoping these bodily traces would all meld into the slip.

I wanted to explore the idea of gifting and offering, to make witting our participation and blurring of bodily boundaries, that I understand is always happening on the quantum level. After the exhibition, *Spooky Action at a Distance*, I waited for the clay to dry out. It took on a green colour and smelt foul, but once it was dry, I took a small sample and looked at it under the SE(M). I wanted to see what all our offerings looked like in the microsphere; to observe how these micro fragments of our bodies (spit, hair, pocket lint, building dust and breath) intra-acted with each other within the clay.

A *making-with* by all participants, witting and unwitting; everyone who was present at *Spooky Action at a Distance* had some form of intra-action with what was happening inside this collection bowl.

During this process, I wondered about the ethics of gathering fragments of peoples' bodies in the context of sympathetic magic, knowing there are belief systems that put importance onto one's bodily traces. There is a trust and a responsibility to treat these fragments respectfully and to not use them in ill faith if, through the understanding of sympathetic magic and quantum entanglement, people are still connected to the fragments of their bodies. I don't want to mess around with that. On the flip side, I saw it as a community building action; creating the environment for everyone's detritus to come together and stay together, creating micro-matter links for the future.

27 I suggested this title, as I thought it was a good way to relationally connect our practices together. Einstein coined the notion of 'spooky action at a distance'. This was a theory he didn't particularly want to believe as he found it spooky, but it denotes the quantum entangling of all matter that has been further studied and proven that there are particles that become connected. That if something happens to one particle, it will show up in the other, transcending space and time: hence *spooky action at a distance*.

28 Christopher Braddock, "*Entangled Animisms: Whakaaro & Dialogue in the artwork of Shannon Te Ao*", (Performance Research Journal, 2019), 74.



Image 21. *Collection Bowl with all the Offerings*, 2023. Ceramic bowl, SE(M) images of recycled clay.



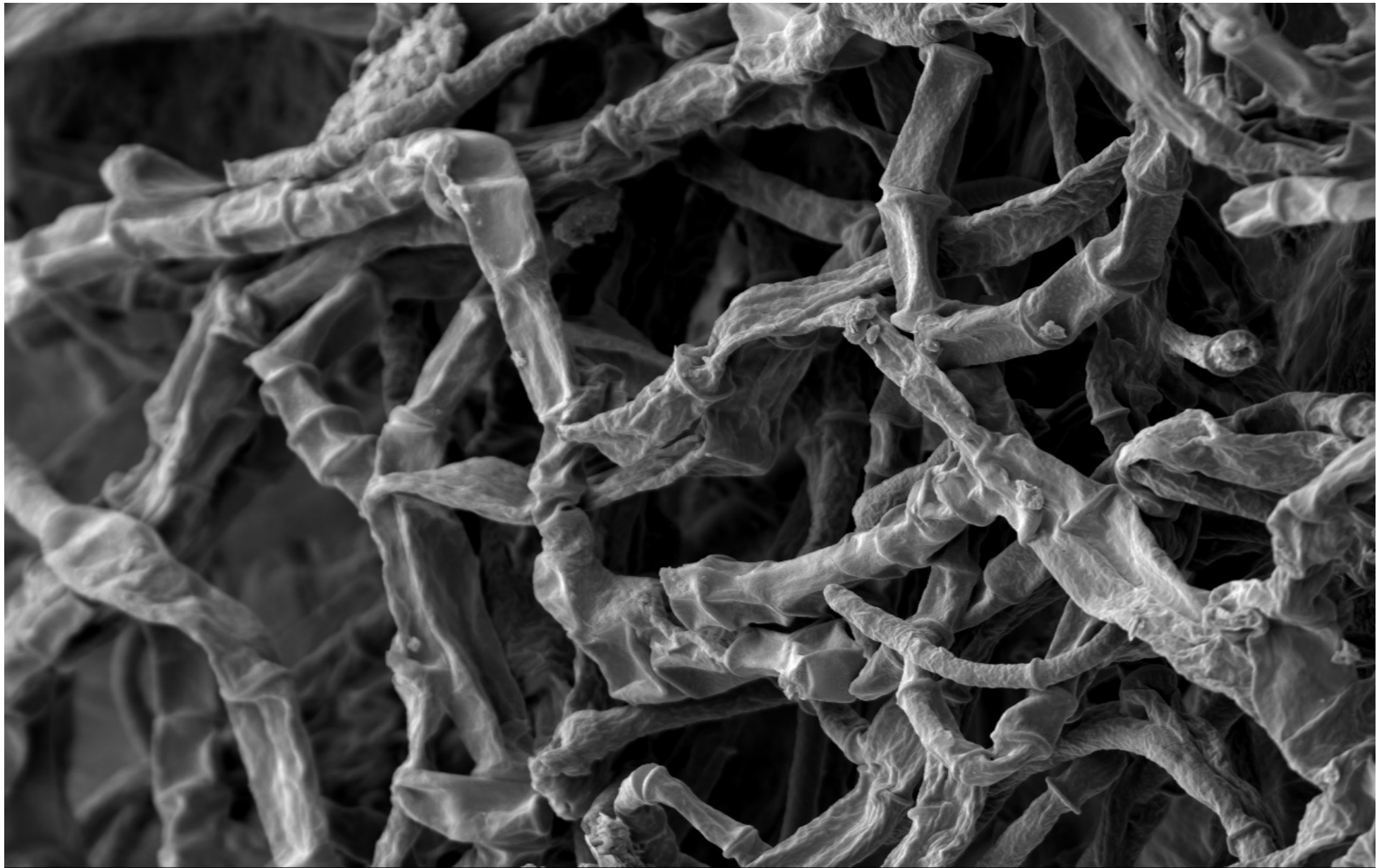
Image 22. *Handmade Recycled Clay Tea Cups*, photo courtesy of Monique Redmond, 2023. Supporting a offering of kawakawa, ginger and lemon balm teas.



Image 23. *Hand Holding Tea Cup*, photo courtesy of Monique Redmond, 2023.



Image 24. *Hand Holding Tea Cup*, photo courtesy of Monique Redmond, 2023.



5.0kV 18.0mm x1.20k SE(M)

40.0um

Image 25. *Dried Fungus Grown from the Collection Bowl Offerings, 2023.* SE(M) image, 18 May, 1:29 PM.

Aotearoa Artist Kate Newby's 2018 exhibition *YES TOMORROW*²⁹ at Adam Art Gallery, Aotearoa, plays around with bringing together bodily casts of participants to create a sculptural 'whole', creating sympathy across space and time. Newby invited participants to create casts of their shins with clay, collecting and firing the casts. Newby laid the casts outside the gallery to build a drainage system, each shin cast linking with another. Individual shins made at different times are now nestled in the environment working together to carry water. These objects are *spacetime mattering*, Newby created the environment for this entangling between, participant, cast, environment, gallery, space and time.



Image 26. Kate Newby, *YES TOMORROW*, 2020. participants clay shin casts, Adam Art Gallery.

²⁹ "Kate Newby: *YES TOMORROW* - e-Flux Education." e-flux. Accessed January 4, 2025. <https://www.e-flux.com/announcements/377024/kate-newbyyes-tomorrow/>.

I will now flick to Australian artist Laresa Kosloff's 2011 *CAST* (with Jennifer Allora, Hany Armanious, Richard Bell, Karla Black, Christian Boltanski, Mikala Dwyer, Dora Garcia, Charles Green and Lyndell Brown, Thomas Hirschhorn, Anastasia Klose, David Noonan, Michael Parekowhai, Grayson Perry, Stuart Ringholt, Renee So, Kathy Temin, Luc Tuymans Angel Vergara, Cathrine de Zegher). Kosloff wore a plaster lower leg cast to the 2011 Venice Biennale, and while attending the exhibition opening, she asked artists to sign her cast. *CAST* was created to "simply produce participation",³⁰ gathering signatures from participants. The cast and accompanying photographic documentation were gifted to Monash Universities collection by Kosloff as a way of protecting it, to continue its circulation; not allowing the cast to be sold by any means. This protection diverts this artwork out of the commodifying art market. The generosity of signing *CAST* is not for the profit of an individual but will be shared with many. I see this as also a way of protecting the participants as if they are entangled with the object via sympathetic magic.



Image 27. Laresa Kosloff, *CAST*, 2011.

³⁰ Braddock, *Performing Contagious Bodies*, 57-58.

Perhaps similar to Kosloff's *CAST*, my *Spooky Action at a Distance* installation was simply to create and collect participation and continue the cycle of *making-with*. The collection bowl was installed in a small room off the main gallery space on a table during the show. The room's walls were covered with A0 printed SE(M) images of the bowl's recycled clay, showing its textures and the quartz and fibres found. After the exhibition, I pulped these images and made them into sheets of paper to be observed once more under the SE(M).³¹ This participation created a new cycle of making, allowing me to observe with the SE(M) the collection bowl and the handmade SE(M) paper.

Something happened while observing the recycled *Spooky Action at a Distance* paper with the SE(M); the paper would glow, and these waves of light would disrupt the images. Sometimes, the sputter coating would rip or crack, or fibres and organisms would wilt. This was due to the phenomenon called charging which occurs when the sample is highly conductive causing the electrons to stay on the surface, distorting the images and damaging the sample. Charging is generally seen as a problem for SE(M) technology, but I found it very exciting, leading me to first think of the SE(M) as a *feeling seeing*.

I researched charging, but all I could find were articles and videos about how to stop it from happening.³² During charging, I observed glimmers in images that appeared when we zoomed to nano micrometres, most likely caused by sound vibrations – Yuan and

me laughing and chatting! A sample that has been intra-acted via charging is known as an *artefact*, as the charging has microscopically altered the sample. The sample holds all these micro intra-actions.³³

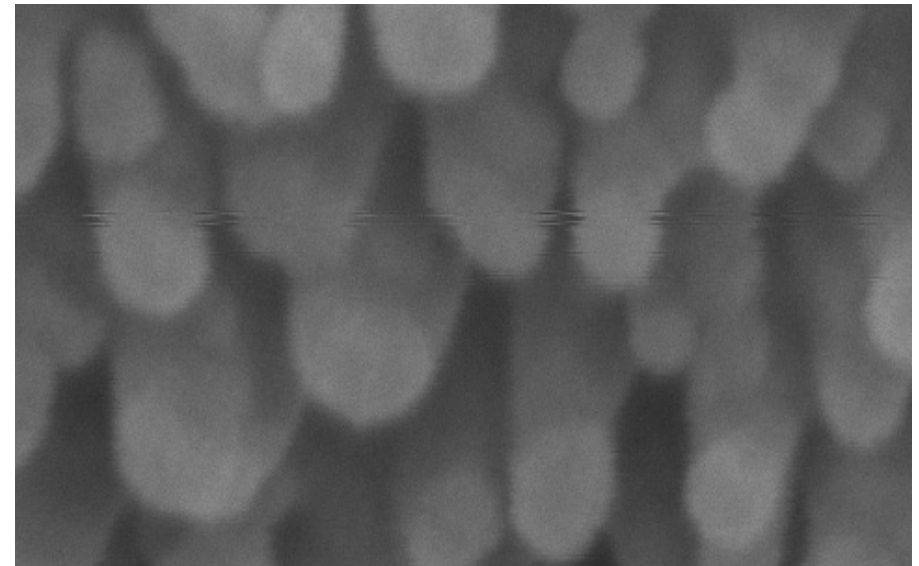


Image 28. *Sound Wave Glimmers*, 2023. Charged SE(M) image of glaze fired Pakiri uku, 18 May, 1:29 PM.

³¹ In my BVA graduating exhibition, I used this paper to cover 90 SE(M) image books; these books contained all of the images I had taken over that year, along with contextual writings from the process and an interview with a physicist friend, Milo Nelson.

³² "Overcome charge-up effects in scanning electron microscopes (sems)", ST Instruments, 2024, November 25, 13.04.2025. <https://www.stinstruments.com/applications/materials-science/overcome-charge-up-effects-in-scanning-electron-microscopes-sems/>.

³³ I started filming my sessions with the Scanning Electron Microscope to better record charging as it occurred, videoing organic forms grown from clay wilting under the beam of the SE(M), or fibers breakings apart. For my BVA graduating exhibition I installed an hour-long video of 'this roaming' with chance intra-actions created by charging.

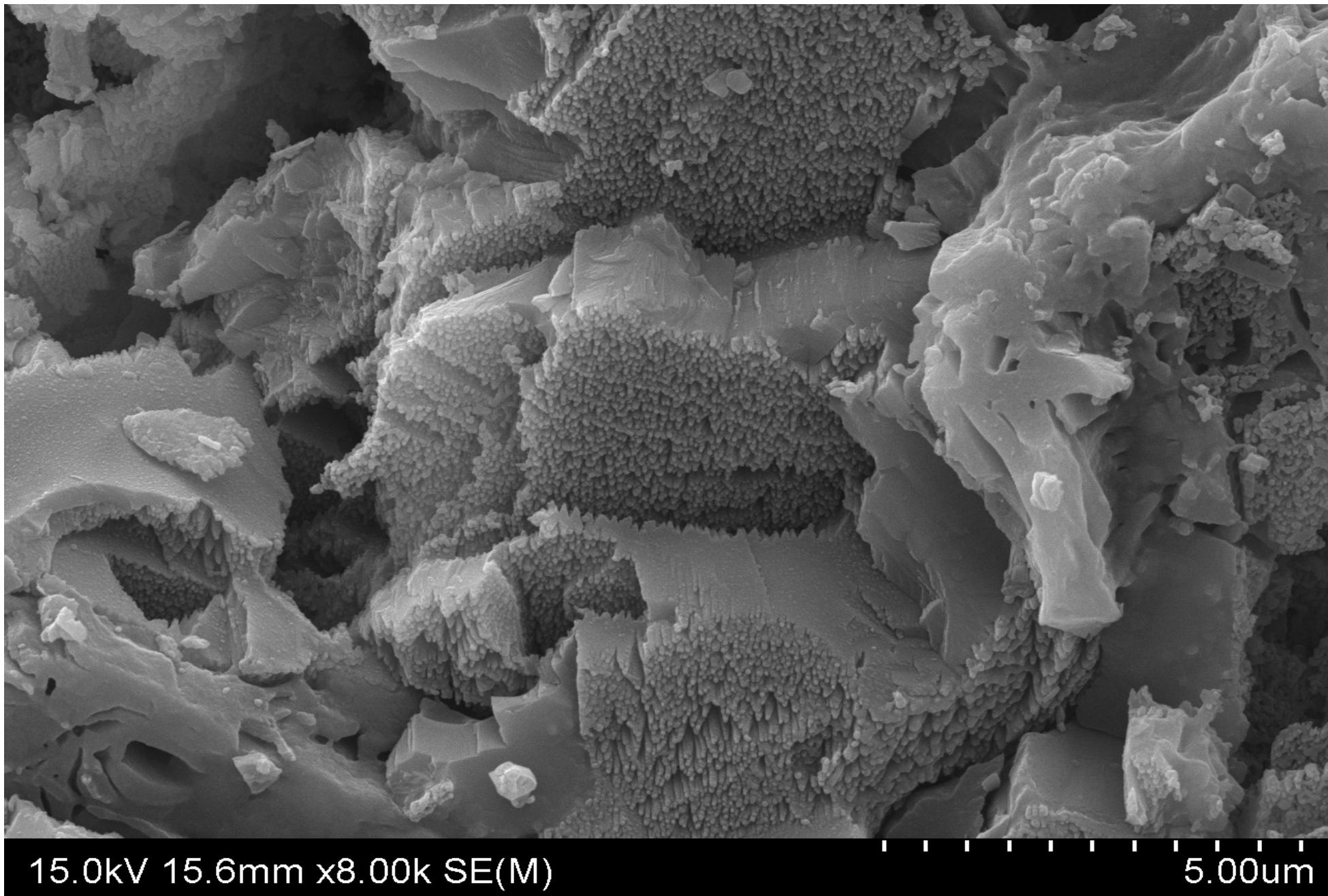


Image 29. *Glaze Fired Pakiri Uku*, 2023. SE(M) image, 18 May, 1:29 PM.

Next page insert: Spooky Action at a Distance Paper





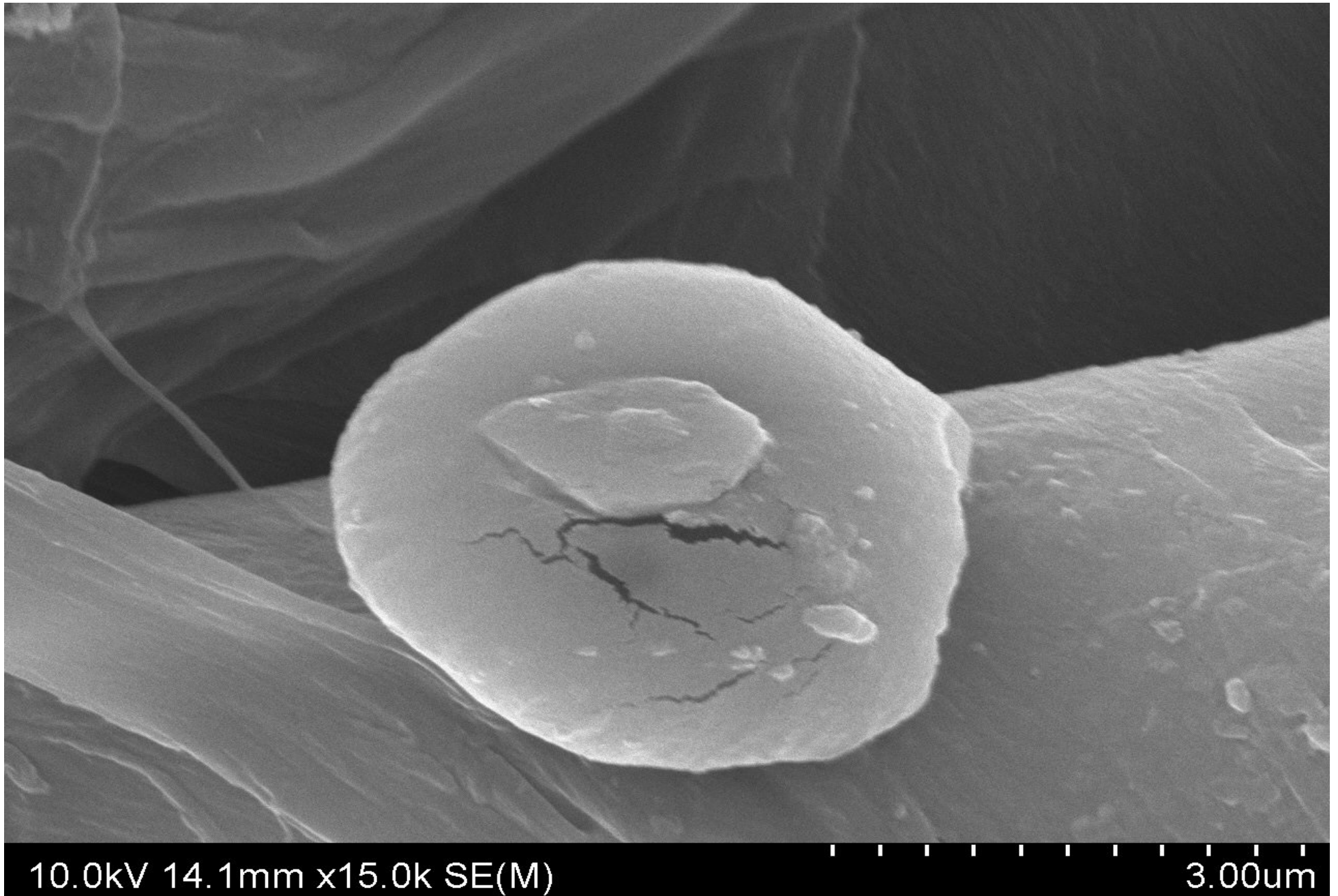


Image 30. *Spooky Action at a Distance Paper Cracking via Charging*, 2023. Charged SE(M) image, 31 July, 1: 58 PM.

Collection Through Dispersal

During our Te Ao Mahora Wānanga, a symposium for researchers in art and design (March 2025), Māori artist Lisa Reihana talked about how she sees all art as artefacts, a culmination of conversations, processes and research that creates these artefacts or taonga.³⁴ Her methodology resonated with my practice, specifically the idea that what creates art is much bigger than the materials we see; the artwork as an artefact that holds all this mauri and is a taonga.

This analogy makes me think about Māori scholar Georgina Stewart (Ngāti Kura and Ngāpuhi) exploration of hau taonga in her paper, *The 'Hau' of Research: Mauss Meets Kaupapa Māori*:

Spiritual forces are ubiquitous but unseen, like between the air. The everyday meaning of 'hau' is wind: we only sense air when it moves. Likewise, the esoteric meaning of hau is the detectable movement of spiritual force, carried by the acts, intentions and associated objects, of those with whom we interact. Hence, the thing someone gives us, in return for a valuable we were given in the first place, carries the spiritual force or memory of those relationships, and is referred to metaphorically as the hau taonga.³⁵

I'm curious about hau taonga in the context of SE(M) samples as artefacts. A SE(M) sample becomes an artefact because of the quantum changes experienced while observed with the SE(M). I wonder about all

the unwitting intra-actions we engage in, changing us (animals, matter, atoms) in microscopic ways. We are all artefacts; Reihana is opening this up to include all art objects created, recognising that there is more to making than artist and material. Can we open this further and apply these acknowledgments to all matter that intra-acts with us?

Newby's casts and Kosloff's *CAST* could be seen as hau taonga holding a spiritual force or memory of those relationships formed by all who have intra-acted and *made-with* these casts. The participation is imbued and held by these casts and is *spacetime-mattering*.

I will now flick to what happens when the gallery space becomes a dispersal network entangling participants to a central fermented matter. GAP [黄馨贤박성환婣潔] FILLER was a group exhibition hosted at Toi Tū Studio One in 2023.³⁶ Malaysian Chinese artist Ruby White created pàocài tǎn, ceramic water-sealed pickling jars. At the start of the exhibition, participants were invited to prepare veggies for pickling in the jars over the exhibition duration. After a month, participants were invited back to eat the pickles with rice at the closing event.

Consuming what was produced by the pàocài tǎn, this mode of participation enabled profound consciousness of the connections with all who participated from past to present. As a coming together and dispersal network, the levels of participation spanned from the macro: what we could see and eat; to the micro: what we experienced in the form of digestion. Art Historian Claire Bishop

³⁴ Lisa Reihana, Te Ao Mahora Wānanga, AUT University, March 27, 2025.

³⁵ Georgina Stewart, *The 'Hau' of Research: Mauss Meets Kaupapa Māori* (Journal of World Philosophies 2017) 8.

³⁶ Ruby 常潔 White, "Ruby 常潔 White: Archive, People," SATELLITES, 6 March 2024, 1 June 2024. <https://www.satellites.co.nz/archive/people/ruby-white>.

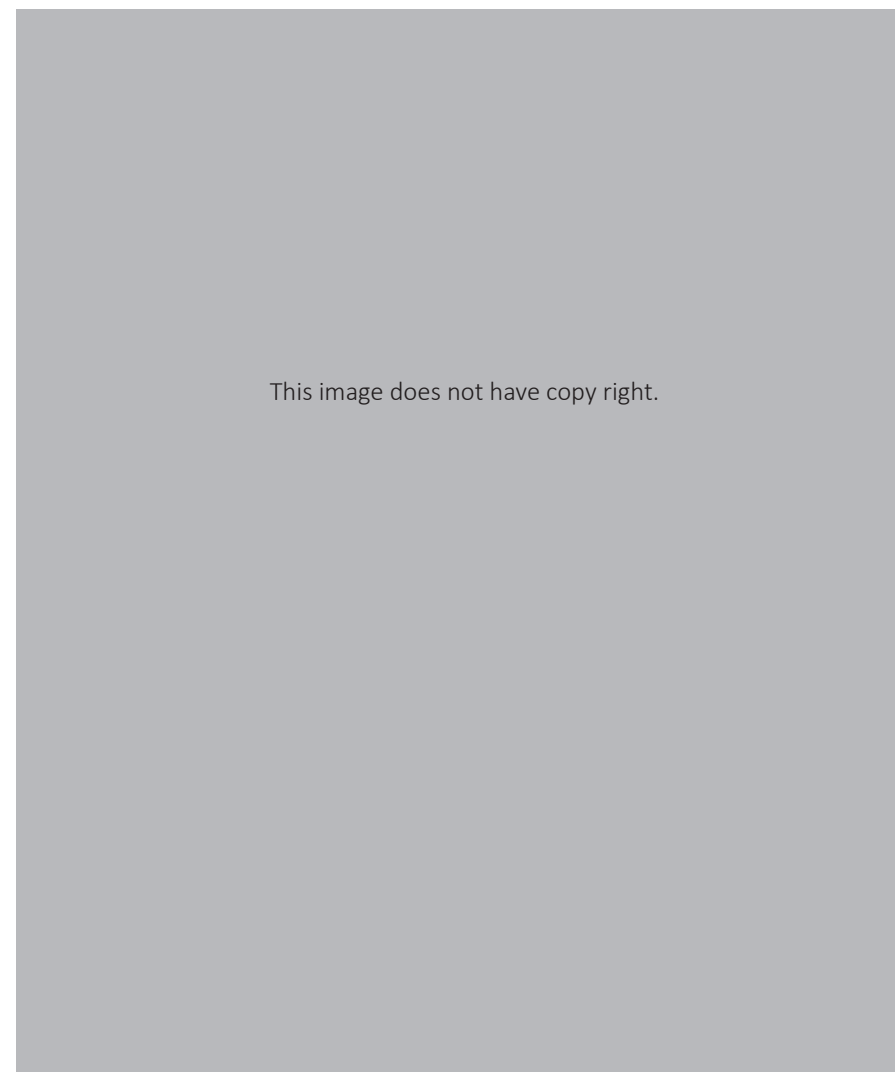
refers to Walter Benjamin's notion of participation in art, which strives for the public's opportunity to consume art in a way that turns into a collaboration.

Participants experienced preparation and consumption that resulted in added organisms in the gut microbiome creating bodily happiness the next day and thereafter. There have been studies into the effects or intra-actions between our gut microbiome and fermented food, in most cases causing anti-depressant and mood-enhancing effects.³⁷

GAP [黄馨贤박성환嫦潔] FILLER was an encompassing experience, drawing attention to the ways in which we are intra-acting with one another on the micro and macro level. In a similar yet different manner, the use of the SE(M) in my practice allows us to perceive the imperceptible: latent images swirling around our world. To bring awareness to this imperceptibility, or ways of viewing, I extended the collection area of the small SE(M) samples to include Te Wai Ngutu Kākā Gallery and the entrance to the WM building to observe what we *make-with*. On the micro level, we (animals, matter, atoms) all leave bits of ourselves behind to reassemble together as new bodies.

For my graduating exhibition (2023), I activated an event at Te Wai Ngutu Kākā Gallery through the installation of videos from the SE(M) exploring the atmospheric sample from the WM foyer. I created

37 Karbownik, M. S., Mokros, Ł., Dobielska, M., Kowalczyk, M., & Kowalczyk, E. (2022). Association Between Consumption of Fermented Food and Food-Derived Prebiotics With Cognitive Performance, Depressive, and Anxiety Symptoms in Psychiatrically Healthy Medical Students Under Psychological Stress: A Prospective Cohort Study. *Frontiers in nutrition, 9*, 850249. <https://doi.org/10.3389/fnut.2022.850249>.



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Image 31. Ruby常潔 White, GAP [黄馨贤박성환嫦潔] FILLER, 2023. Pàocài tǎn, ceramic water-sealed pickling jars.

dispersal networks for ephemera in the form of A5 books containing all the images I had taken with the SE(M) allowing participants to take something from the gallery away with them, into their own homes, and then onto the compost, a dusty bookshelf, or to be re-gifted. As I am actively collecting atmospheric samples within the gallery space, I feel it is only fair to have something to be distributed back. This also allows me to practise and continue cycles of collection and dispersal; as matter leaves my practice the act of giving away is recorded by an atmospheric SE(M) sample generating future material to be folded into the cycle.

This level of intra-active exchange can be seen and witnessed. A physical object to hold in your hands is more tangible than the carbon dioxide you inhale. Bringing people together in a gallery space already creates a dynamic exchange of breath, smiles, and information. This enables a participatory distribution alongside the works from the SE(M) and allows this unwitting participation to become a little more witting.

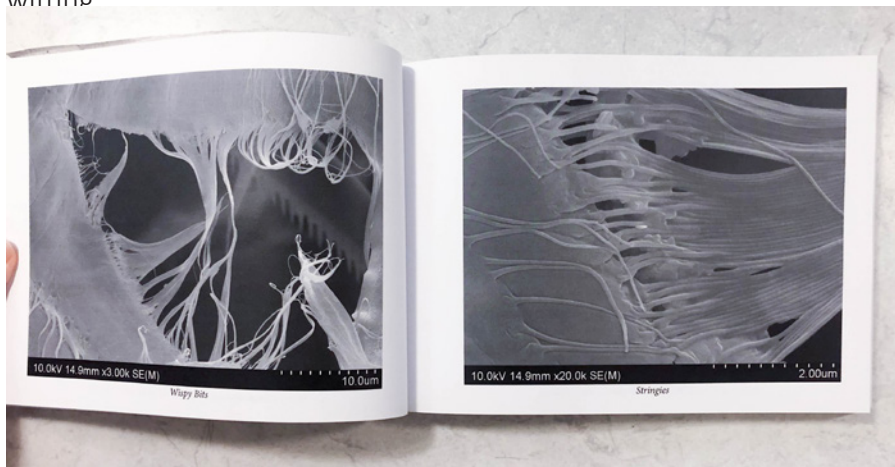


Image 32. *Handmade Paper Bound SE(M) Image Books*, 2023. SE(M) images of a broken *Daphnia* body.



Image 33. *Handmade Paper Bound SE(M) Image Books*, 2023. Stacked and inviting participants collection, active SE(M) sample above. BVA graduating exhibition Te Wai Ngutu Kākā Gallery.

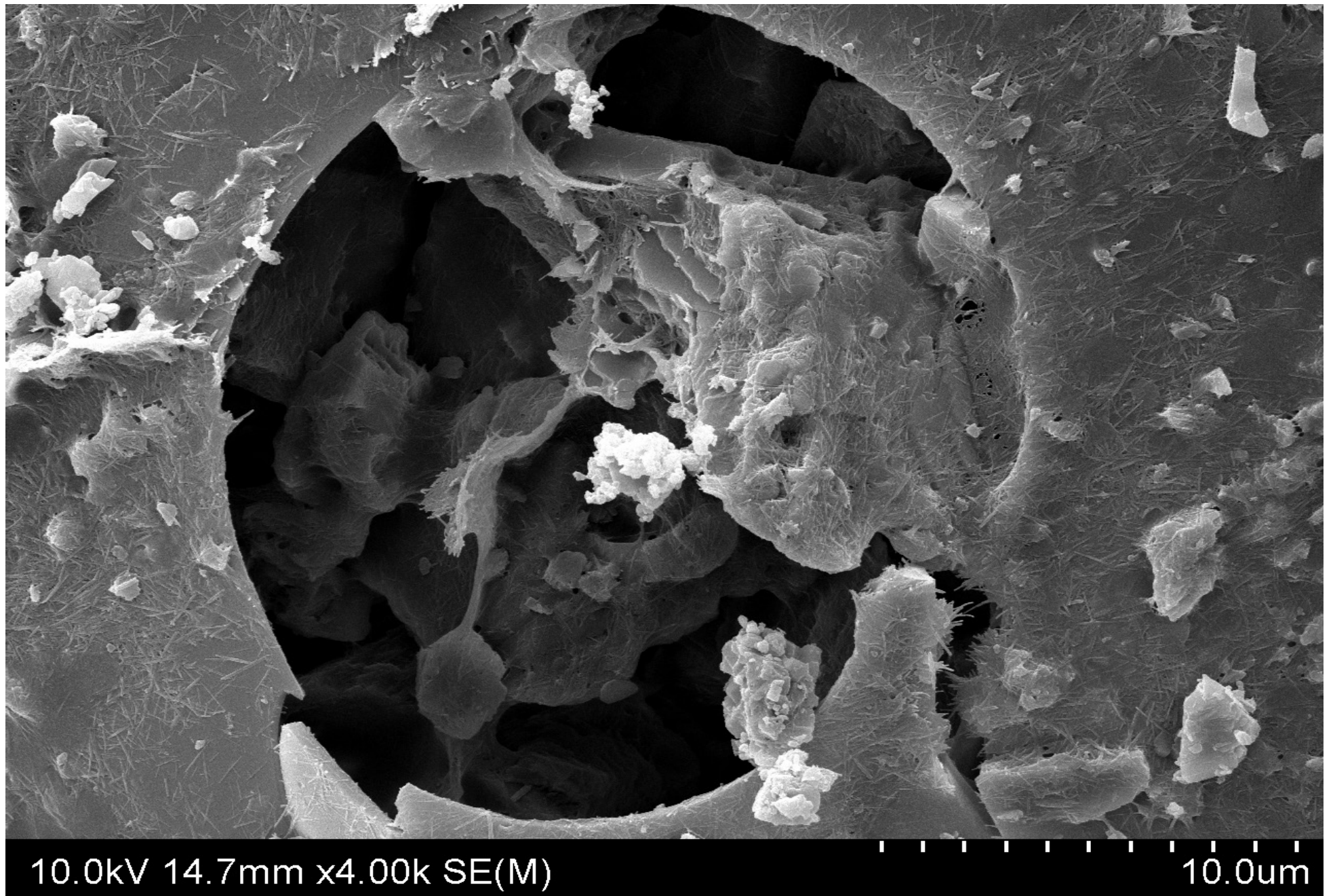


Image 34. Atmospheric Sample from Te Wai Ngutu Kākā Gallery, 2024. SE(M) image. 4 March, 9:49 AM.

'Arty Sciences'

As previously stated, we are all *making-with* the intra-actions around us. I want to explore this further with help from the phenomenon of the 'Apparatus'. Karen Barad introduces the idea of the apparatus in the context of Agential Realism, stating: "(a) phenomenon is a specific intra-action of an object, and the measuring agencies; the object and the measuring agencies emerge from rather than precede, the intra-action that produces them."³⁸ Building off Quantum Physicist Niels Bohr's understanding of the apparatus, using the analogy of a man feeling around a dark room with a stick, Barad states the man becomes one with the stick: there is no separation between the outside and inside body. This is also very similar to Feminist philosopher Donna Haraway's *Cyborg Manifesto*.³⁹ Haraway proposes we have become cyborgs and one with technology. I am 'one' with this computer I am typing; on the bus, I see most people with their phones in their hands and look down at my own. Our lives have become so entangled with technology that it is hard to think of a time before. These three thinkers are breaking the boundaries of subject/object, or more accurately observing they were never really there. The apparatus is an active participant in measuring, making or observing.

The SE(M) as an apparatus becomes one with the environment; the sample and observer(s) are intra-acting and *making-with* the SE(M). American scientist David Bohm states, "One can no longer maintain the division between the observer and observed."⁴⁰

38 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Duke University Press, 2007), 128.

39 Donna J Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (Routledge 1991), 149-181.

40 David Bohm, *Wholeness and the Implicate Order* (Routledge & Keegan Paul, 1980), 12.

The 'malfunctioning' process of charging affords experiences of sympoiesis or SE(M)-POIESIS when the SE(M) is charging, allowing us to observe/participate within these experiences of charging. The samples (turned artefacts) affected by charging can be seen as sculptures holding the traces of observation within them.

As an artist *making-with* the SE(M), I understand these moments of charging as more than hindrances to representation (i.e., 'bad scan'), which a typical scientist would observe in this 'malfunctioning'. Barad states, "The line between subject and object is not fixed, but once a cut is made (i.e., a particular practice is being enacted), the identification is not arbitrary but in fact materially specified and determinate for a given practice."⁴¹ Our lens and viewing systems, created through the practices and methods that we use to seek understanding, influence how we observe. Working within a sympoietic methodology from an artistic background, I found I could be open and observe and *make-with* this phenomenon as surprising changes arise from sympoiesis. In this respect, my studio methods upend perceptions of scientific observation in favour of a 'malfunctioning' that influences how we make visible the unseen effects of intra-active observation at the quantum level which results in charging. Australian artist Fiona Hillary uses the concept and term, "arty-science" in their PhD, *A Creative Cartography: What Can Public Art Practice Do to Intervene in Our Rehearsal of the Future?* Hillary's practice incorporated their "companion species" the dinoflagellates, a glowing Phytoplankton found off the coast of Naarm (Melbourne, Australia).

41 Barad, *Meeting the Universe Halfway*, 155.

Hillary worked alongside scientists to better understand these beings. She states, “[a]s my methods evolved to include new hybrid artistic/scientific approaches they became something other, and crucially my practice became something other; dissolved.”⁴² Hillary’s relations with the dinoflagellates reminds me, just as the boundaries are dissolving between apparatus and observer, the blurring between art and science is welcome within the way we approach and intra-act within our world.



Image 35. Fiona Hillary, *Pyrocistis Lunula I*, 2021. Image of dinoflagellates.

⁴² Fiona Hillary, *A Creative Cartography: What can public art practice do to intervene in our rehearsal of the future?* (Victoria: Deakin University, 2021), 55.

An historical example of the blending between art and science is the 1889 publication of the first fully coloured art book in Aotearoa, *The Art Album of New Zealand Flora: being a systematic and popular description of the native flowering plants of New Zealand and adjacent islands*. This publication is a survey of Flora and Fauna found in Aotearoa illustrated with chromolithographic reproductions made from original water colour paintings by Sarah Ann Featon with accompanying text by her husband Edward Henry Featon.⁴³ I see myself continuing in a tradition of art and science in the collection of flora and fauna from a particular region. My practice enfolds data collection, and storage; Atmospheric SE(M) Samples, Paper Pulp, Uku and Clay relating to my specific *spacetime mattering*. In relation to this collection and datafication of flora, I will introduce to my project *Four Years’ Worth of Flowers*.



Image 36. Sarah Anne Featon, *Mānuka*, 1875. Water colour of manuka flowers.

⁴³ Kirsty Baker, *Sight Lines: Women and Art in Aotearoa*, (Auckland, Auckland University Press, 2024), 35.

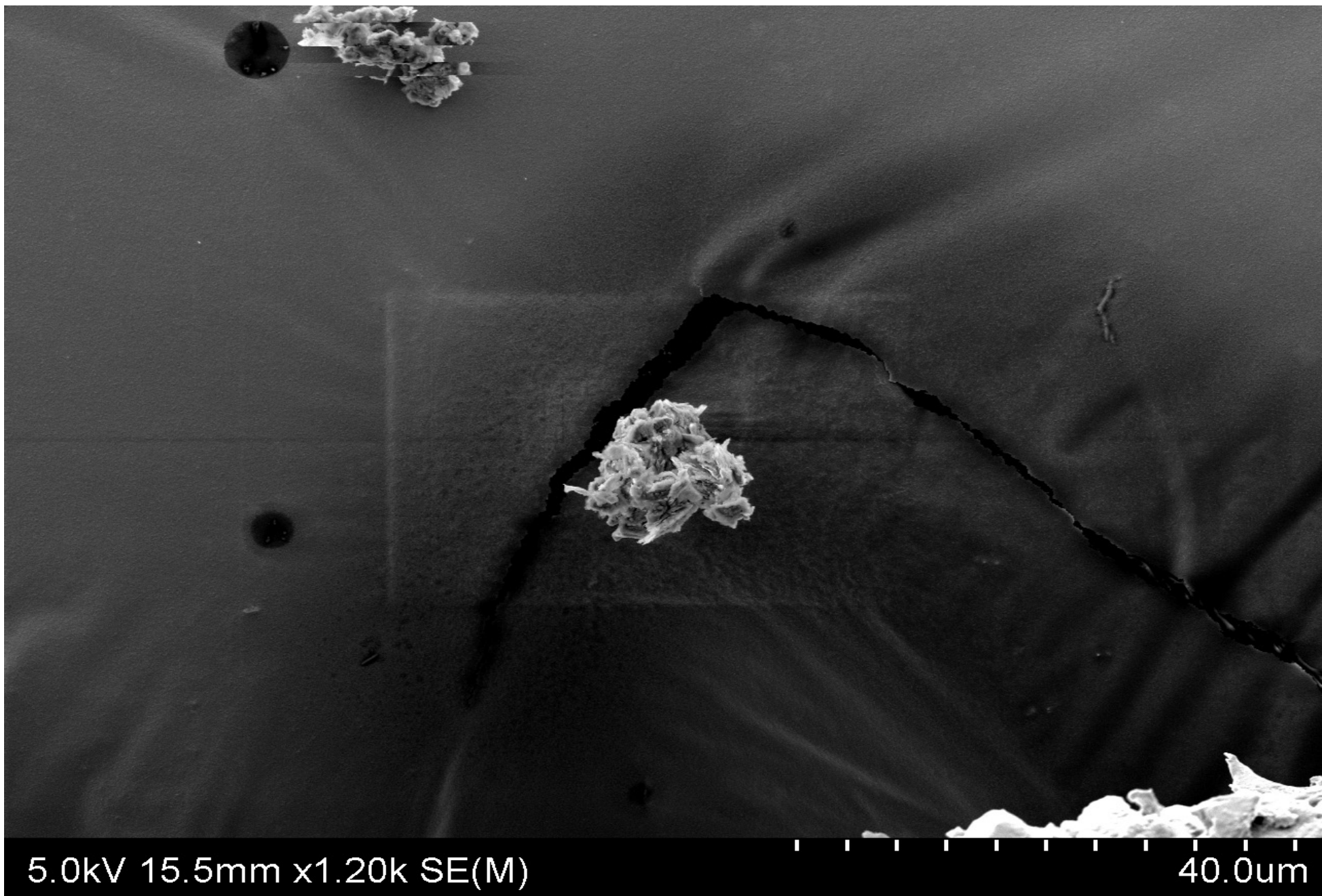


Image 37. *Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample Charging, 2025.* SE(M) image, 19 March 10:49 AM.

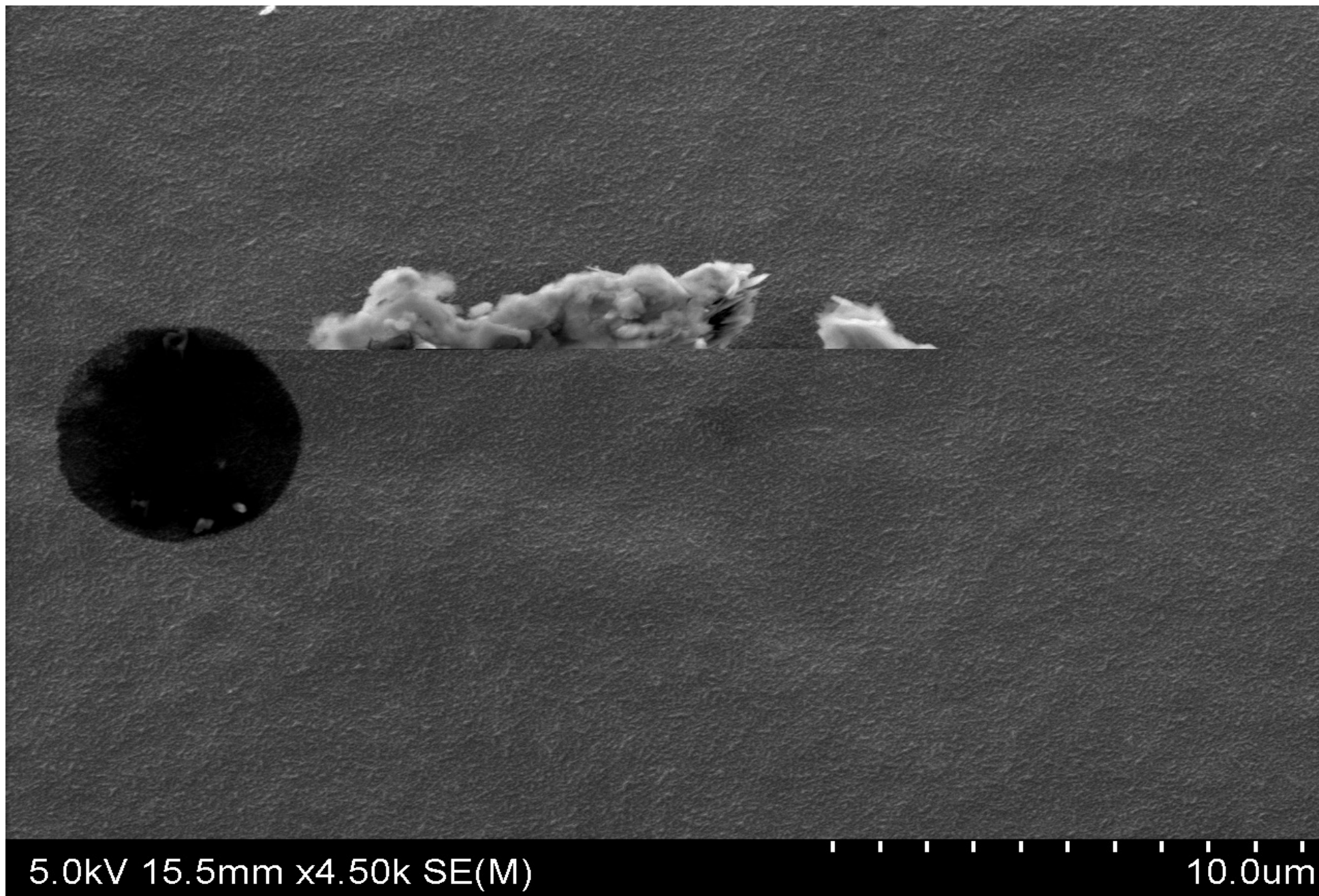


Image 38. *Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample Charging, 2025.* SE(M) image, 19 March 10:49 AM.

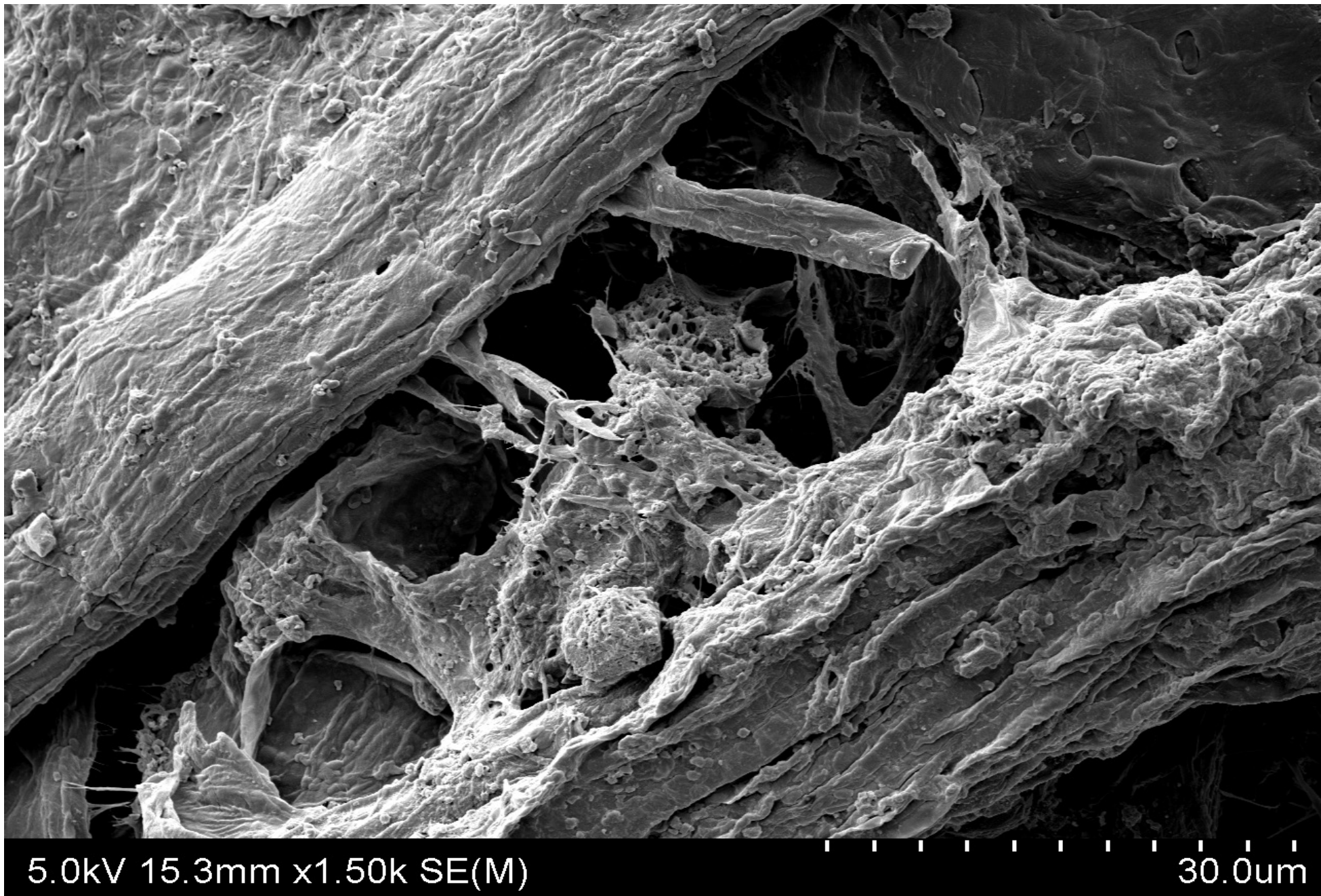


Image 39. *Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample*, 2025. SE(M) image, 19 March 10:49 AM.

The Gift that keeps on Giving: Four Years' Worth of Flowers



Image 40. *Graduation Flowers*, 2024. Dried flowers cut up.

Over the last four years (2021-2024), I have collected all of the bouquets gifted to me on various occasions; the first bouquet came the day my partner and I moved into our apartment, which was also Valentine's Day. The rest came to me as gifts for birthdays, funerals, graduation, or 'just because'. I collected and dried the bouquets until my partner and I moved house and had to downsize. These bouquets are hau taonga holding memories, I didn't want to compost them, so I decided to turn them into paper for storing and *making-with* in the future.

This work, *Four Years' Worth of Flowers* was presented for Visual Arts Talk Week (critique event) in August 2024.

The process of turning these bouquets into paper was one of aroma. Having to cut the flowers into small pieces for the papermaking process, I would then submerge them in boiling water creating a semi-inedible tea, working upon my and other students' olfactory systems, creating a wonderful smell. There were kākūka, mānuka, eucalyptus, roses, dahlias, hydrangeas, and snapdragons, to name a handful of the many. The studio smelled delicious, and the flowers bobbing in the water were beautiful. I took many photos for documentation. The first sheets of paper were made 100% from three different categories of bouquets: *Graduation Flowers*, *Funeral Flowers*, and *Everything Flowers* (all the small itty bitties combined).

The paper was fibrous. It held together but it took around 45 minutes to carefully remove the paper off each screen with a surgical knife. Only two sheets of paper were made per bunch. Consequently, I decided to 'bulk' the flowers and incorporated printed photographs taken in the process of turning the flowers into paper (images of flowers in the boiling water or after being blitzed in a Nutribullet). Using the printed flower images along with the dried flower paper introduced paper into this process somewhat more as an acquaintance holding the essence of the flowers, transferred into printer pigment.

This *Four Years' Worth of Flowers Paper* was observed under the SE(M), finding pollen, plant cells, and fibres. These images were printed at A0 size, black and white on the plan printer and displayed on the wall alongside the SE(M) sample of the scanned flower paper. I made 23 hand-bound books from the flower paper to be gifted away (each holding twenty pages at 120mm x 110mm), sewn together with blue wool.⁴⁴ During the event and sharing of *Four Years' Worth of Flowers*, I gave the hand-bound flower paper books to willing recipients. Now the 23 books hold touch records of my and their hands, and have gone out into the world. I also installed a fresh sample with damp flower paper atop to collect any passer-by debris and matter for the duration of Talk Week. This sample was for future observation with the SE(M), to see how our matter intra-acts with the matter of the flower paper. Collecting while dispersing, continuing on the cycle of *making-with*.

The presented A0 scale printed SE(M) images of the flower paper were de-installed and then turned into another run of paper yielding over 80 sheets just bigger than A3, which are currently sitting in a stack waiting to be activated.

As these flowers came to me as gifts, I felt it was only fitting for them to be passed on as gifts processed into a new form. The change to the flower's materiality highlights the gift's conduit nature; it combines both the material and the act of giving away. I see these material objects as vessels of intra-actions. For me, a gift that keeps on giving is one that moves. With each intra-action the gift is imbued with more relationships, charging the gift with hau taonga.

⁴⁴ This wool was collected by students when the knitting machines at AUT were decommissioned for a year.



Image 41. *Funeral Flowers*, 2024. Steeping.



Image 42. *Funeral Flowers*, 2024. Paper.

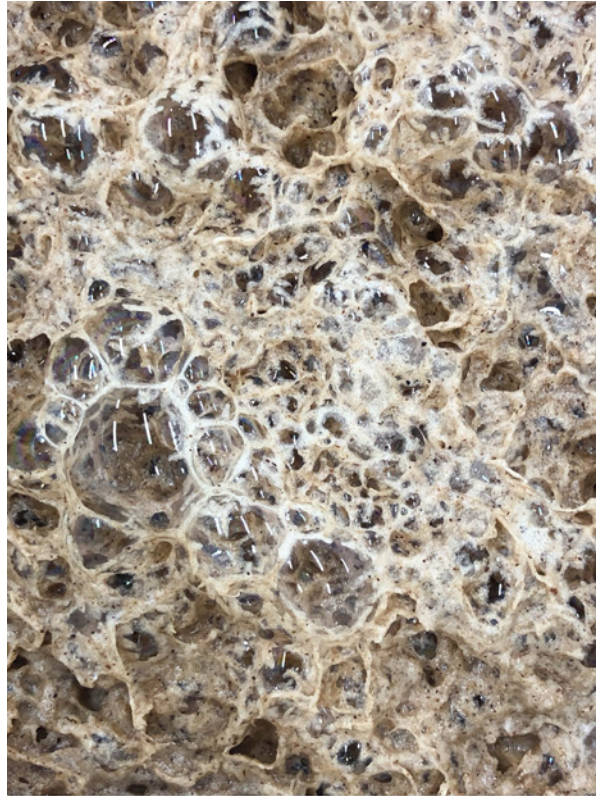


Image 44. *Everything Flowers*, 2024. Blended.



Image 46. *Graduation Flowers*, 2024. Paper.



Image 43. *Everything Flowers*, 2024. In the blender.



Image 45. *Everything Flowers*, 2024. Paper.



Image 47. *Funeral Flowers*, 2024. Dried.

All materials that come to me as gifts have in some way remained in their gift state, always gesturing an offering. For example, a previous PhD student and fellow Wet Lab companion, Emelia French, gifted her leftover clay from her artwork to mine. I recycled this clay and made it into cups, bowls, plates, spoons and a knife for our studio kitchen. When I leave, they will stay to circulate and be used. I activated these tools by baking a brownie cake in a ceramic bowl I made, setting up a morning tea offering for my lecturers, Mon, Ingrid and Jeena, as part of my Studio A work for assessment.

Through this practice, the gift continues and so does the *making-with*; my lecturers bodies digest and are *made-with* chocolate in the brownie, containing a little caffeine to perk them up. Now the studio space has plates and bowls and cups that all students can use to create a moment for nourishment, intimacy and *making-within* their bodies, continuing the cycle of reciprocity.⁴⁵

Incorporating public participation into my installations as a bon voyage of sorts, allows these materials and gifts to circulate within a cyclic dispersal. Lewis Hyde talks about gifting within a circle. In this context, a gift between two people can be more of a direct line; it can stagnate, whereas a gift passed along or re-constituted (as the flowers had been) and given to many others is abundant.⁴⁶ For example, one gift given to me has been recycled and turned into many; I wouldn't have been able to do this without past generosity.

⁴⁵ Eating the cake could create a semi-sugar rush, so I offered yoghurt as an option to curb and slow down how the body breaks down sugar. I didn't want our lecturers to crash out as they marked mine or others' work!

⁴⁶ Lewis Hyde, *The Gift: How the Creative Spirit Transforms the World* (Canongate Books, 2012) 16.



Image 48. *Brownie Cake Eaten by Lecturers*, photo courtesy of Monique Redmond, 2024.

Next page insert: *Four Years' Worth of Flowers Paper*







Image 49. *Four Years Worth of Flowers*, photo courtesy of Monique Redmond, 2024 . SE(M) images of Four Years' Worth of Flowers, paper atmospheric sample mounted to the wall, AUT Talk Week Critique. 25 July.

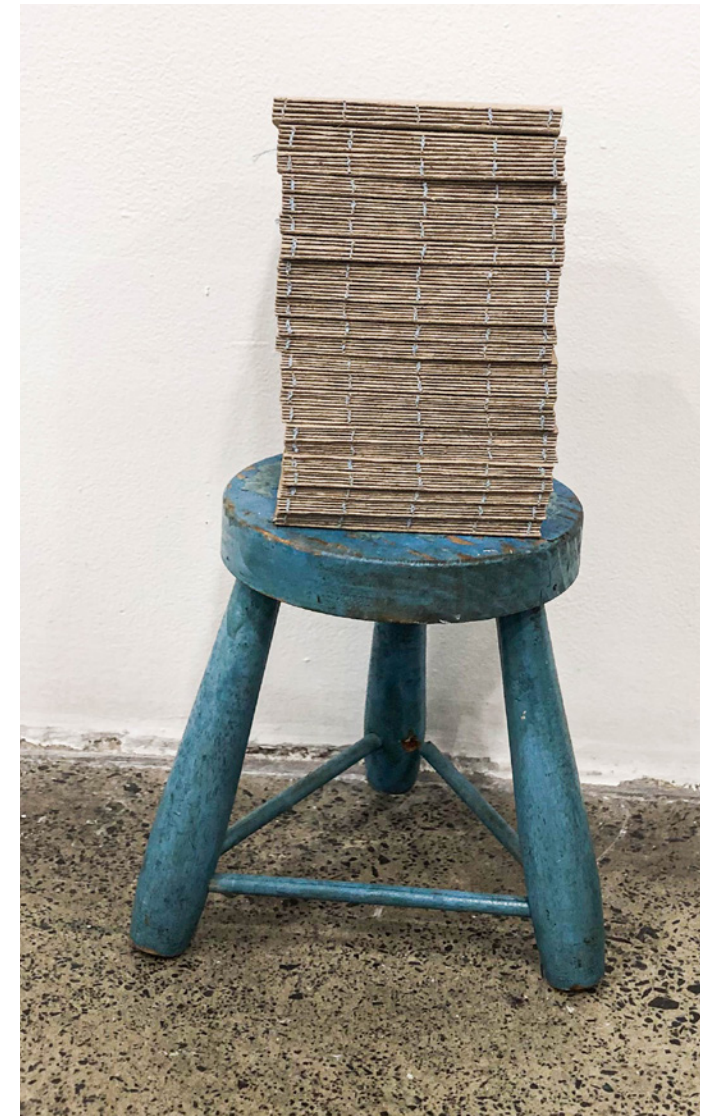


Image 50. *Four Years Worth of Flowers Paper Handbound into Books*, 2024 .Given away at AUT Talk Week Critique.

Lee Mingwei has an extensive participatory exchange practice, Mingwei's (2009 –) *The Moving Garden* is a participatory installation event where the public are invited to take a flower from the long granite table with the intention for the bloom to be passed on to a stranger as viewers walk away from the gallery. Mingwei created a clear set of instructions along with the invitation:⁴⁷

***The Moving Garden* invites you to take a flower from the central channel of the granite table as you leave the museum. By doing so, however, you agree to the following conditions:**

1. Take a different route from the one you used to get here when you leave the museum.
2. Give the flower as a gift to a stranger that you meet along the way.

Let the act change between you and the recipient of your gift. The unexpected encounters between strangers triggered by this project will create a moving garden that grows from the and extends into the city.

Mingwei enacts a cycle of exchange: the flower is not just for the participant but is a gift to be passed along. Instead of creating a closed cycle between two points, the instructions open up the sphere of gifting to go beyond the boundaries of the gallery space. Anyone walking along the street could be a recipient and become a participant within this project just by going about their day-to-day lives. Mingwei's gift is abundant in its givenness, and creates the environment for a witting social exchange that wouldn't normally happen.

47 Kataoka Mami, *Lee Mingwei and His Relations: The Art of Participation- Seeing, Conversing, Gift-Giving, Writing, Dining and Getting Connected to the World*, (Tokyo, Mori Art Museum, 2014), 73.



Image 51. Lee Mingwei, *The Moving Garden*, 2016. NGV install, Melbourne.

More recently, I have been making photopolymer prints and printing them onto the paper made from the Talk Week A0 Scale SE(M) Images. For my graduating exhibition, I will be giving away photopolymer SE(M) image⁴⁸ ephemera from the Atmospheric SE(M) Studio Sample printed onto my handmade paper from, *Spooky Action at a Distance* and the *Four Years' Worth of Flowers* SE(M) Image Paper as well as fresh paper made from all the off cuts of previous paper runs and paper collected through my studio practice. These images will be presented to be collected by public participants.

With the process of creating photopolymer prints, at every step there is room for material collaboration, a kind of charging. For example, the press used to push the photopolymer film onto the steel plate may cause bubbles in the film because of different weight distribution in the blankets. Other kinds of blankets used also create their own pattern of weaving that is impressed onto the photopolymer print. Printing is such a sensitive process; that each successive step allows materials to collaborate and for a dynamic *making-with*.

Flicking back to this notion of collecting through dispersion, I want to re-iterate how, during these last three years, I have collected matter during and for dispersal events. The collection bowl and atmospheric SE(M) samples have amassed quantum matter from all participants (animals, matter, atoms). The SE(M) generates images, leaving observation traces upon these microscopic assemblages. The SE(M) images are printed at A0 size on the plan printer, always in black and white. These images are then exhibited while another collector (atmospheric sample) is present. This cycle continues as the paper is pulped down and given away in the covers of books. At the same time, an atmospheric SE(M) sample is active, once again collecting

48 I will be printing 32 images; I will add the photopolymer and then print the plate. Afterward I can strip it off and reuse it again.

material to be folded back into the practice. There would be nothing without public participation (animals, matter, atoms). I am collecting these making-withs, catalysing my future-making, and nurturing my practice's cycles. What is collected is a witting or un-witting gift that is gifted back within my practice. All matter and material collected and produced within this practice remain in a gifted state.

We have all made this work, and this gift and exchange was already yours because we have all contributed to its making and continue to keep making-with it. There are soft edges here. Everything blurs. My making is not just me; it is everything making-with. Because we have all contributed to this work, witting and unwittingly, we can subvert questions about exchanges in gifting, as Jean-Luc Marion notes:

Reducing the gift to itself, that is to say, to givenness, and givenness to itself implies no longer thinking the gift within an exchange where, as a present object, it would pass indifferently between the giver and givee, but as a pure given.⁴⁹

What is created through this quantum collecting of *spacetime mattering* is a gift, present in its givenness. Flickering through the micro and macro levels of exchange within participatory art practices indulges and produces an understanding that there are no boundaries, all exchange is intra-active, and the gift exists to move along and to continue in its givenness.

49 Jean-Luc, Marion, *Being Given: Towards a Phenomenology of Givenness*, (Stanford University Press, Stanford, California 2012). 85.

Conclusion

In this exegesis, I have highlighted through my own and other art practices the ways we are entangled: from the organisms and plants that this practice's environment has been able to grow, to the observations of the Scanning Electron Microscope's intra-active *making-with* by the observer(s), sample, and sound. In a myriad of ways, 'we' are in a constant exchange and participation with one another, wittingly and unwittingly. This creative research nestles itself and flickers between contexts of Tikanga Maori, symposium and quantum entanglement, bringing these together through a process-based participatory art practice.

And now to ka muri, where am I going. In my graduating exhibition you will see all the samples I have gathered over the course of my postgraduate research. There will be handmade paper from the *Spooky Action at a Distance* exhibition and the *Four Years' Worth of Flowers SE(M) image paper*, holding photopolymer prints of SE(M) images taken from the Atmospheric SE(M) sample I have had recording in my studio for the duration of my postgraduate study. These prints are available to be collected and carried away as ephemera. The ferns that have grown by the Pakiri uku will be transplanted and given away to friends. Much of my practice will move on and through the world gathered through dispersion.

The world has been influencing this exegesis, and its intra-acting and entangling with you, the reader. I hope this has been an enjoyable journey picking up pieces from the past and bringing them back to the present. There are so many registers of time,

held in the materiality of this project. The pages of this document contain significant momentary points from the last five years of undergraduate and postgraduate study that have continued and cycled through. These pages have collected and encompass this information, just as the recycled clay, uku, paper, and atmospheric SE(M) samples are all collecting and recording their animals, matter, and atoms specific to their *spacetime mattering*, carrying past time to the present; entangled with what was and what is now.

As this practice is cyclic and always ongoing, this is more of a see you later, a mā te wā until we meet again...

Ngā mihi mahana,
Nikita



pears from spray free garden - help yourself

Image 52. Pears shared in studio on a Plate made with Emelia Clay, 2025. 25 March, 11:31 AM.

Exhibition Documentation

For my examination exhibition, *Flickering Through the Micro to Macro*, I installed in Te Wai Ngutu Kākā Gallery 32 photopolymer SE(M) image prints. The images were printed on handmade paper containing scraps of paper from *Four Years' Worth of Flowers paper*, *Spooky Action at a Distance paper*, the *RELAY* exhibition and even drafts from my exegesis. Each photopolymer SE(M) image print was produced in multiples of 4-8, making around 180 prints in total. These were installed on 3D printed purpose-designed hooks, suspended from the wall's surface.

The photopolymer prints were a gift to be collected by participants. They could choose a print from the wall, and then roll the print up, and select a ceramic band to hold the rolled print for ease of carrying. Next to the *Ceramic Bands* was the observed SE(M) Atmospheric sample that was used to generate the photopolymer SE(M) image prints. I also placed a fresh collecting SE(M) Atmospheric Sample at the left-hand end of the wall for scanning later on. The number of the photopolymer prints would dwindle during the exhibition, and I would restock them each day. Until there was nothing left.

For the examination, I made more teacups from the recycled clay. I brought in my teapot from home; a gift from my great-great-aunt Valrai. I made ginger tea to share with the examiners and convener. During our conversation, I placed the SE(M) atmospheric sample on its 3D printed holder, activating the collection of all our *makings-with* for the duration of the exhibition.

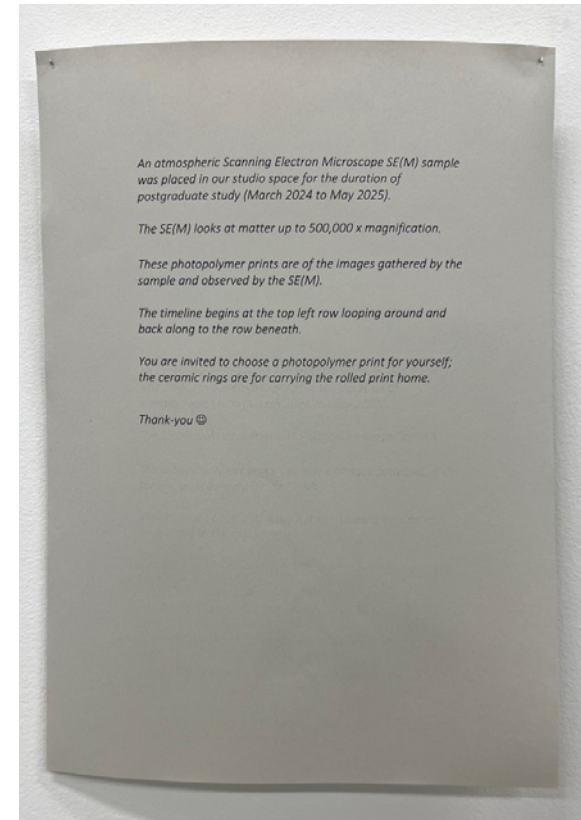


Image 53. *Exhibition Invitation & Information*, photo courtesy of Monique Redmond, 2025



Image 54. *Handmade Cups and Ginger Tea for the Examiners*, photo courtesy of Monique Redmond, 2025



Image 55. *Ceramic Bands*, photo courtesy of Paul Chapman, 2025.



Image 56. *Ceramic Bands, SE(M) Atmospheric Sample, Photopolymer Prints*, photo courtesy of Monique Redmond, 2025.

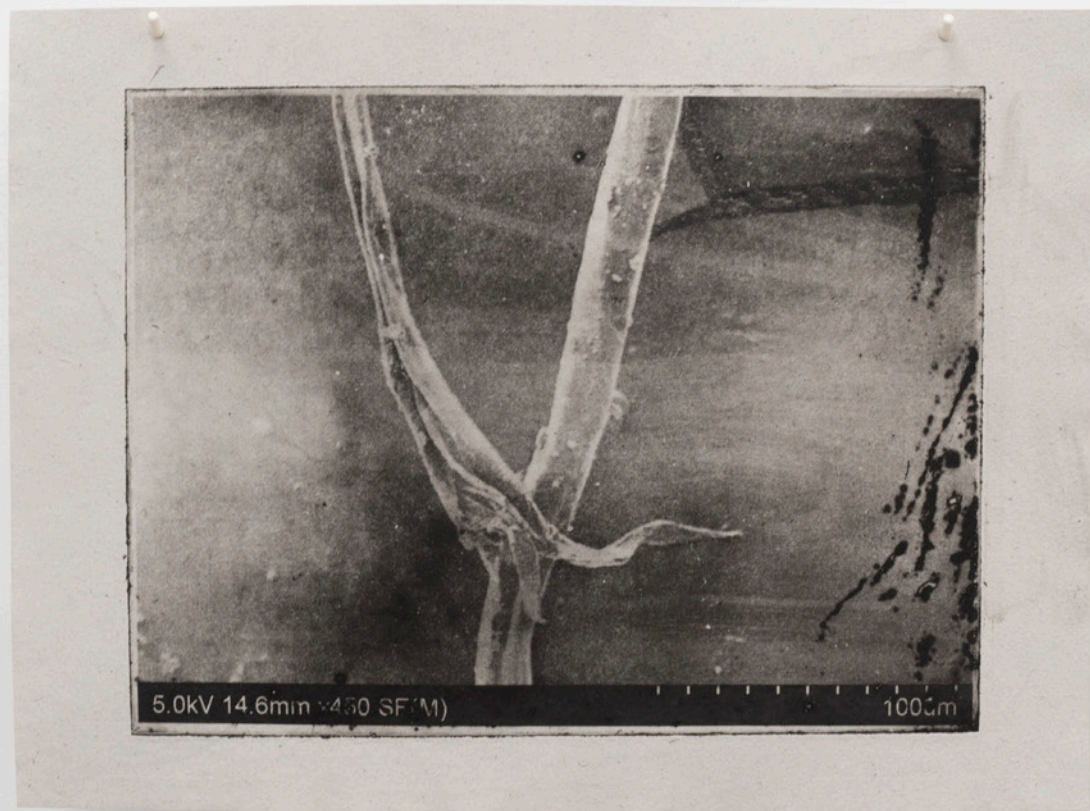


Image 57. *Photopolymer Print*, photo courtesy of Paul Chapman, 2025.



Image 58. *Photopolymer Prints Installed Te Wai Ngutu Kākā Gallery*, photo courtesy of Paul Chapman, 2025.



Image 59. *Photopolymer Prints Installed Te Wai Ngutu Kākā Gallery*, photo courtesy of Paul Chapman, 2025.



Image 60. *Photopolymer Prints*, photo courtesy of Paul Chapman, 2025.



Image 62. *Re-hanging new Photopolymer Prints*, photo courtesy of Paul Chapman, 2025.



Image 61. *Photopolymer Prints*, photo courtesy of Paul Chapman, 2025.



Image 63. *SE(M) Atmospheric Sample Collecting*, photo courtesy of Monique Redmond, 2025.

Post Examination Exhibition

As the practice never ends, I have continued to *make-with* after this exhibition. I brought the Daphnia to Te Ra Awatea's kainga in Huapai. We poured them in three different places, hoping to give them multiple chances of survival. We scattered them in a water trough that feeds the ducks and chickens, so they might end up in some puku's. We scattered them in a pond, and then up a hill in a small awa.

I have been sent images of where my prints have ended up from family and friends. I have also observed the collected SE(M) examination exhibition atmospheric sample with the SE(M). Here are all the images we created in the six days the exhibition was active.



Image 64. *Daphnia on the Bus*, 2025.



Image 67. *Daphnia in Water Trough*, 2025.



Image 65. *Daphnia in Awa*, 2025.



Image 68. *Daphnia in Pond*, 2025.



Image 66. *Daphnia in Awa*, 2025.



Image 69. *Daphnia in Awa*, 2025.

Post Exhibition SE(M) Observations

I observed the SE(M) examination exhibition atmospheric sample with the SE(M). Here are some of the images we created in the six days the exhibition was active.



Image 70. *Daphnia* in Pond, 2025.

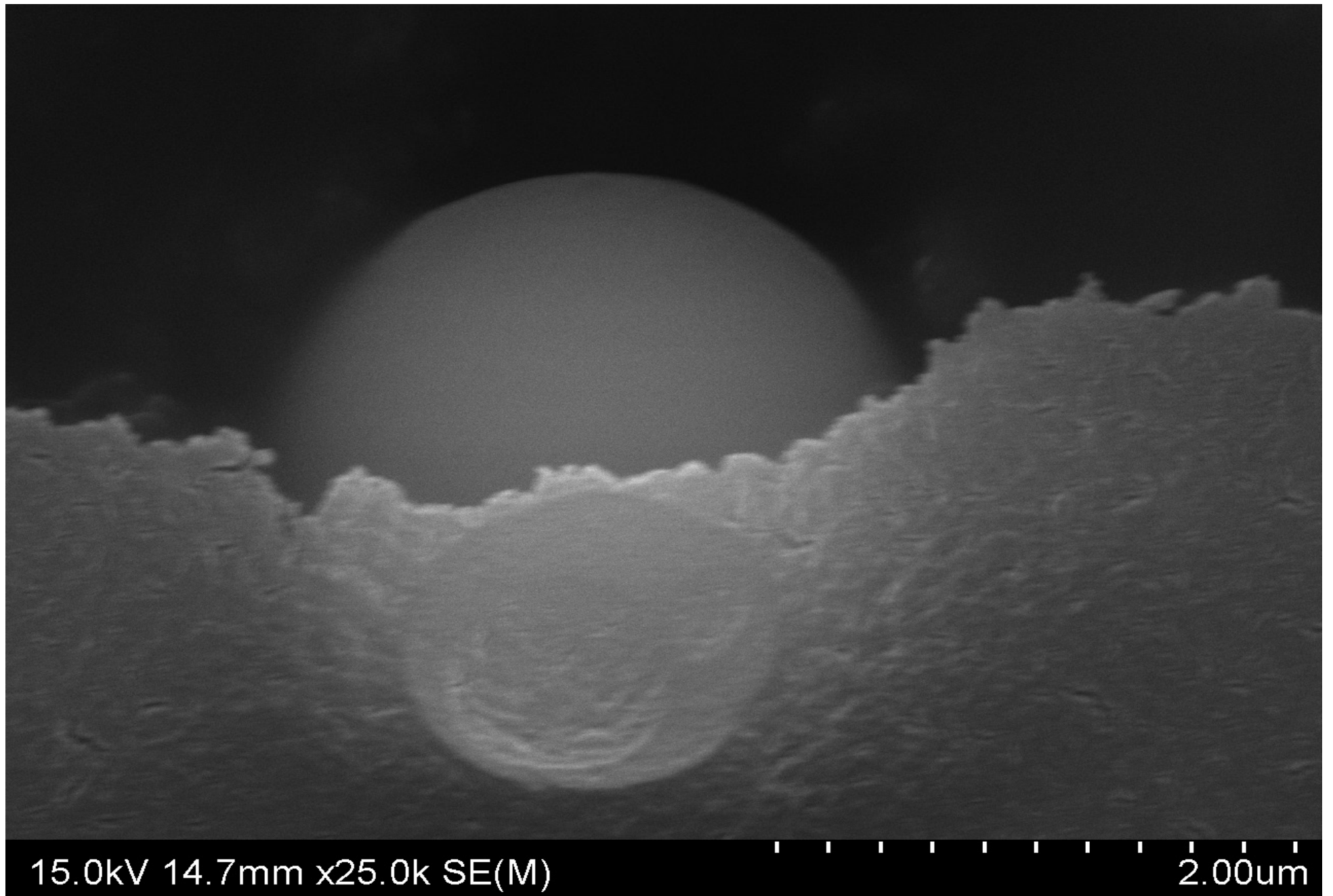


Image 71. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

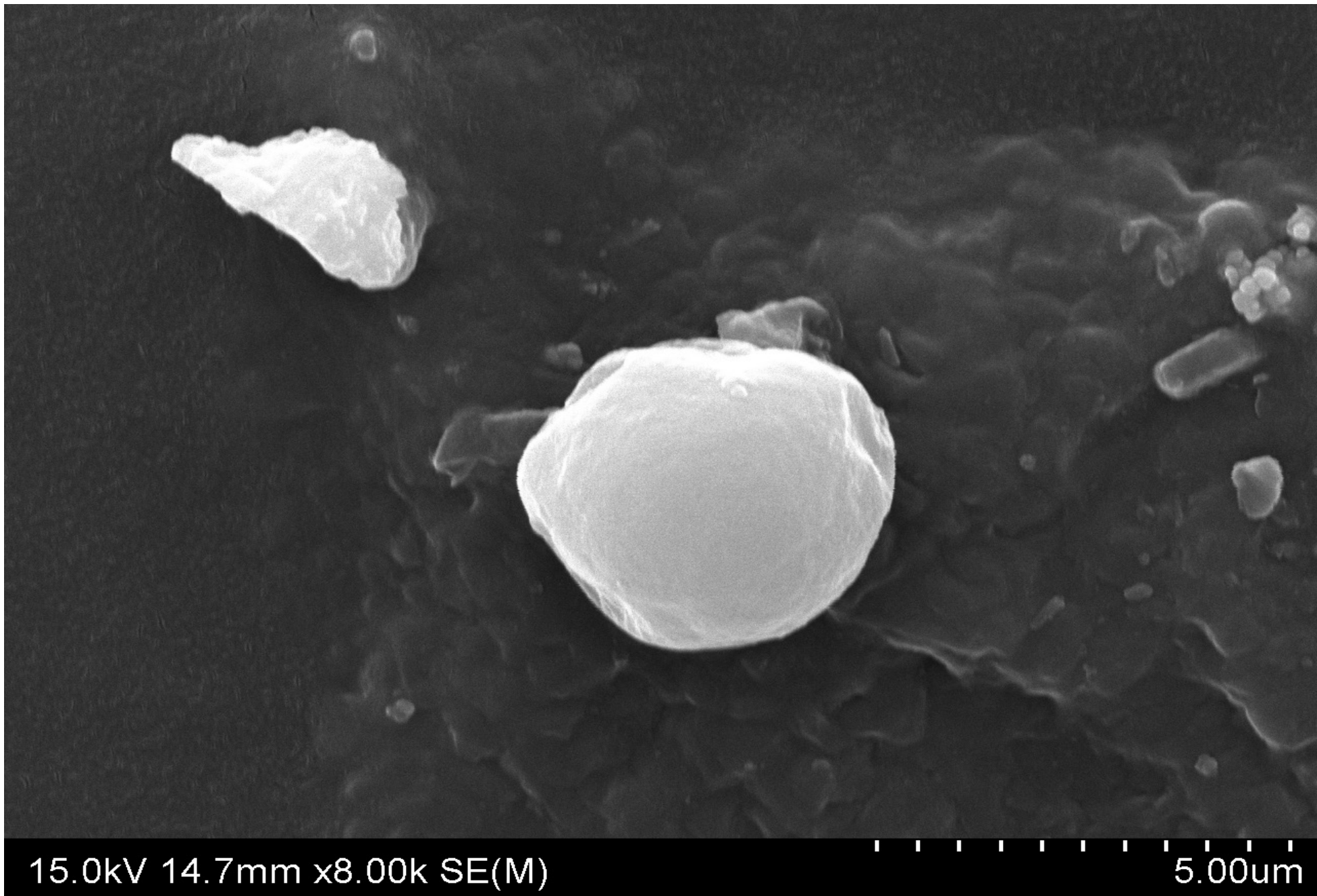


Image 72. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

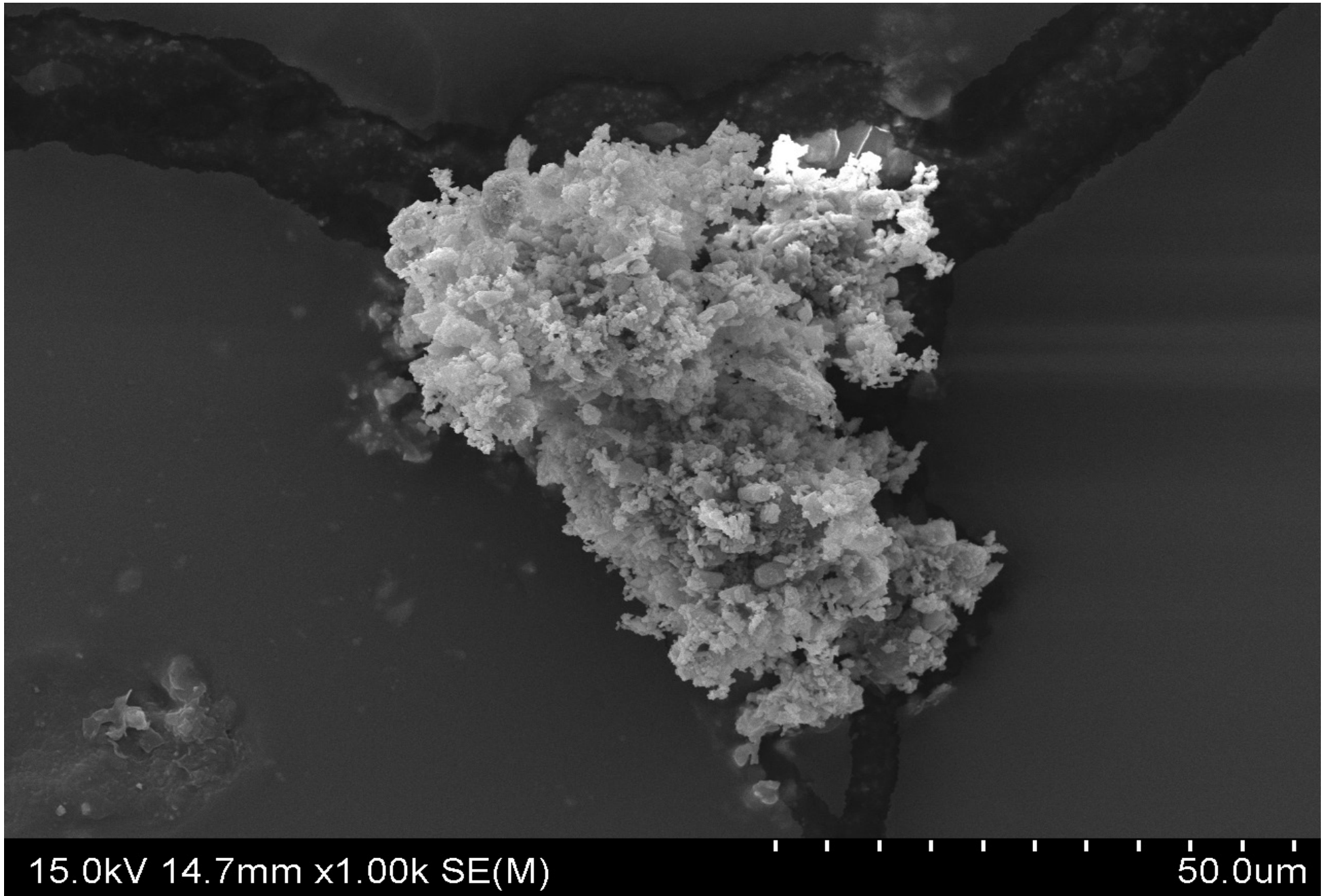


Image 73. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

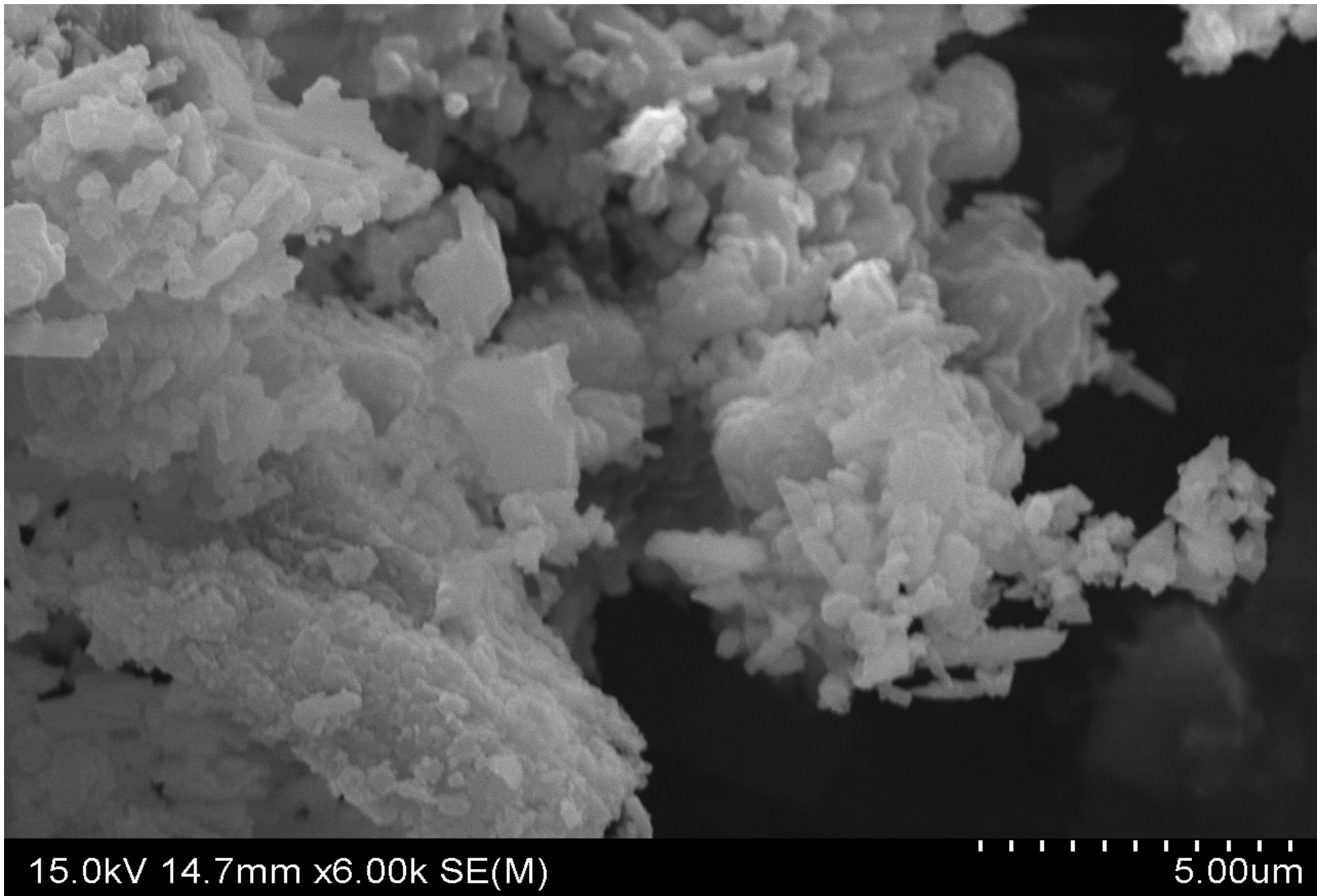


Image 74. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025

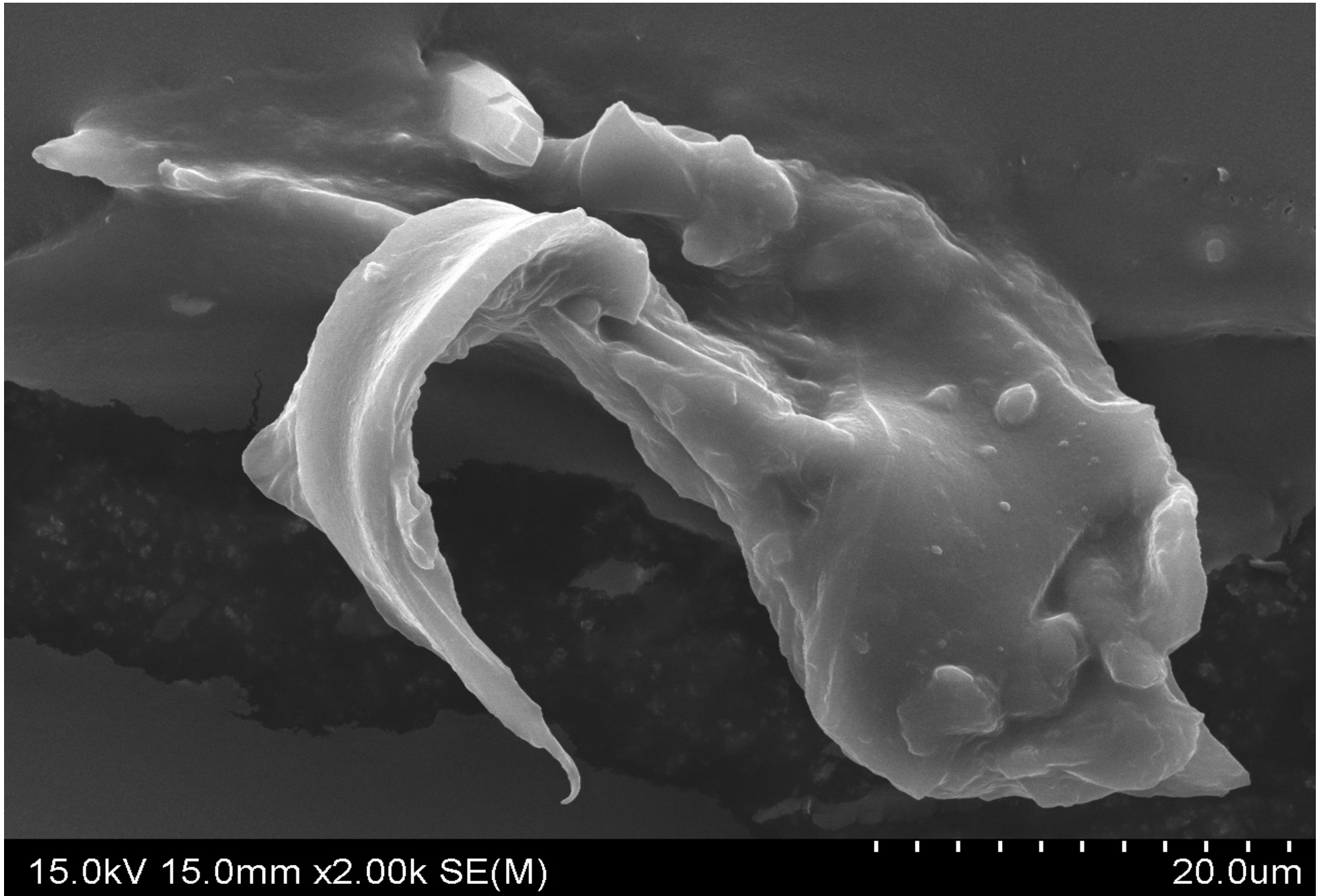


Image 75. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

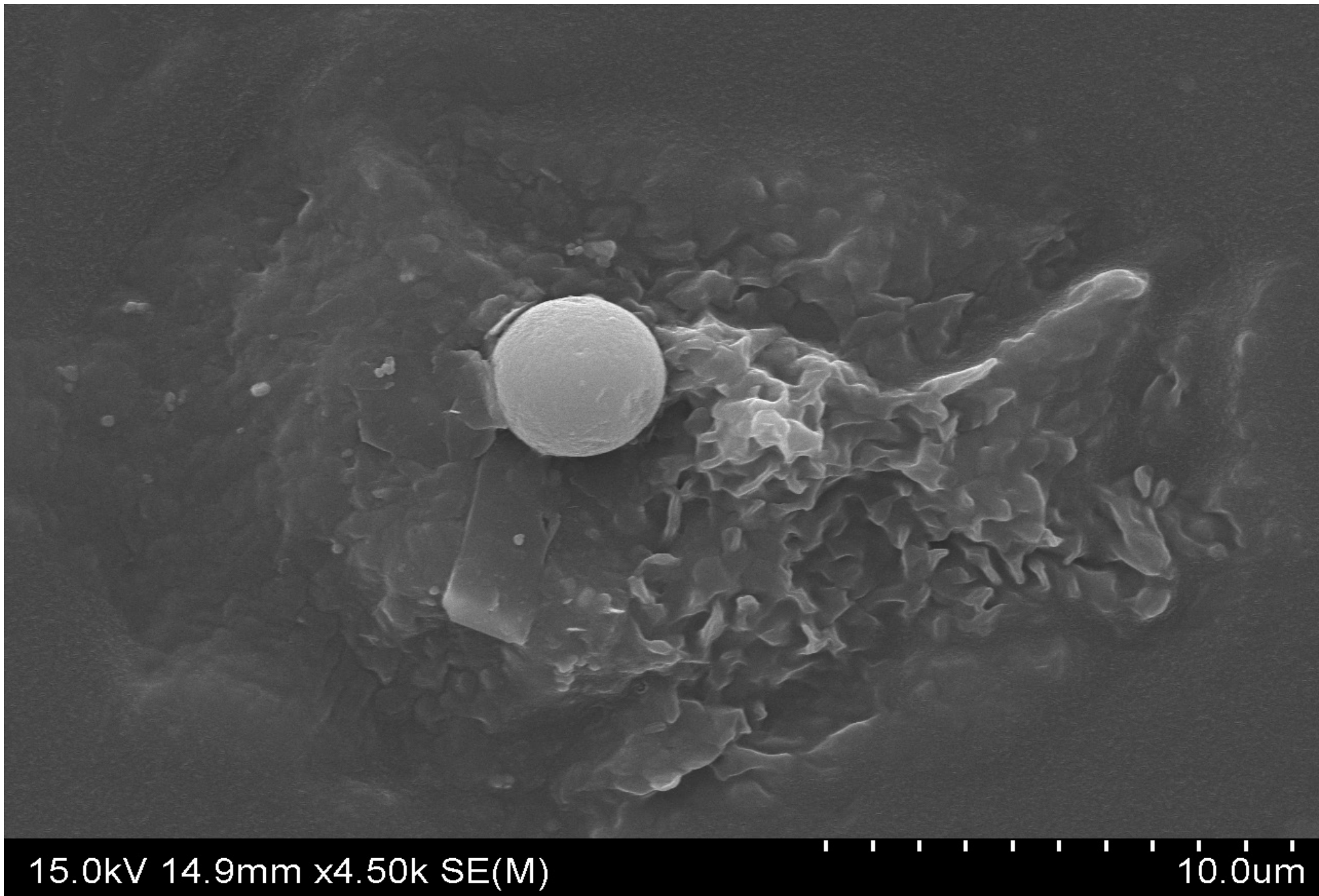


Image 76. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

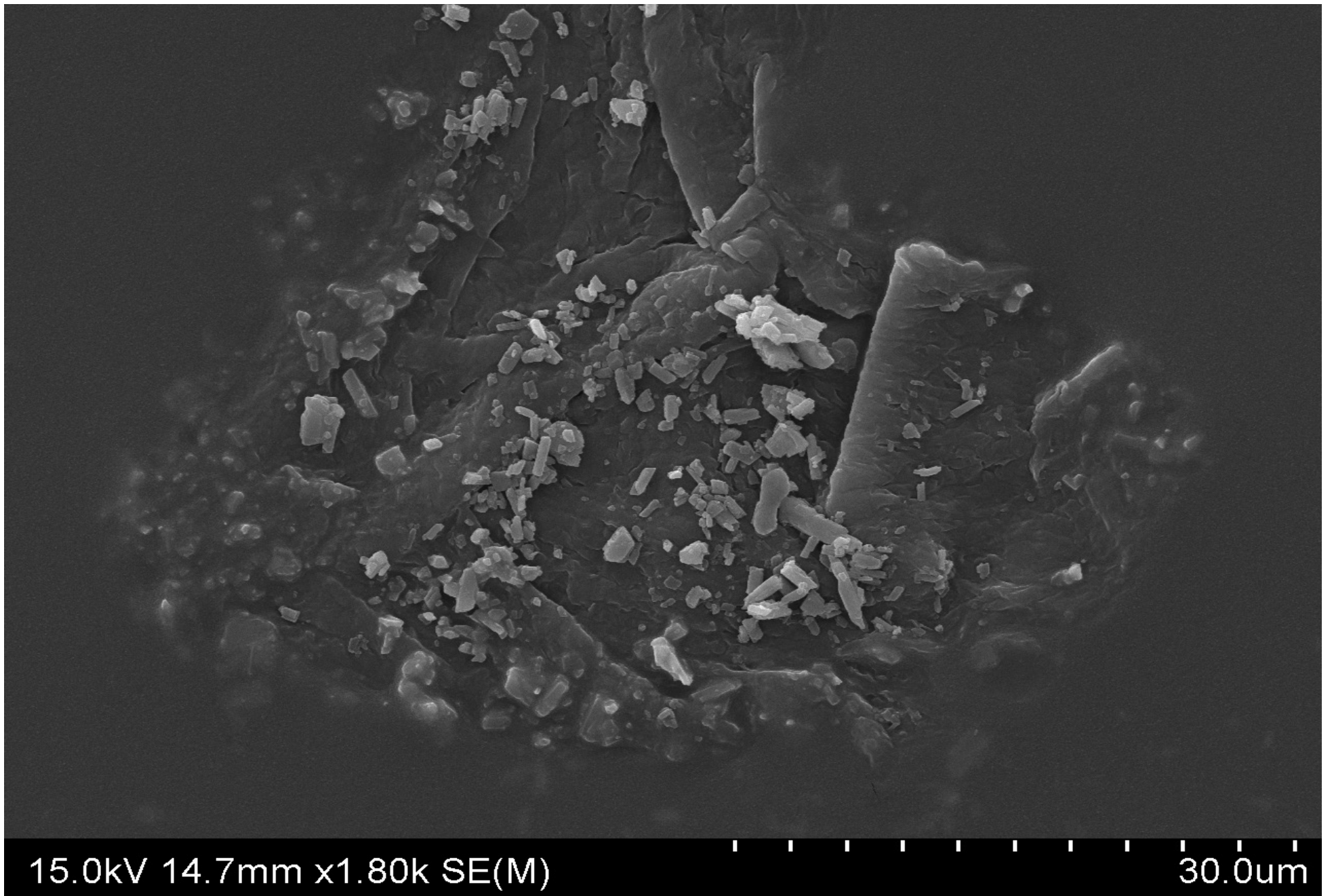


Image 77. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

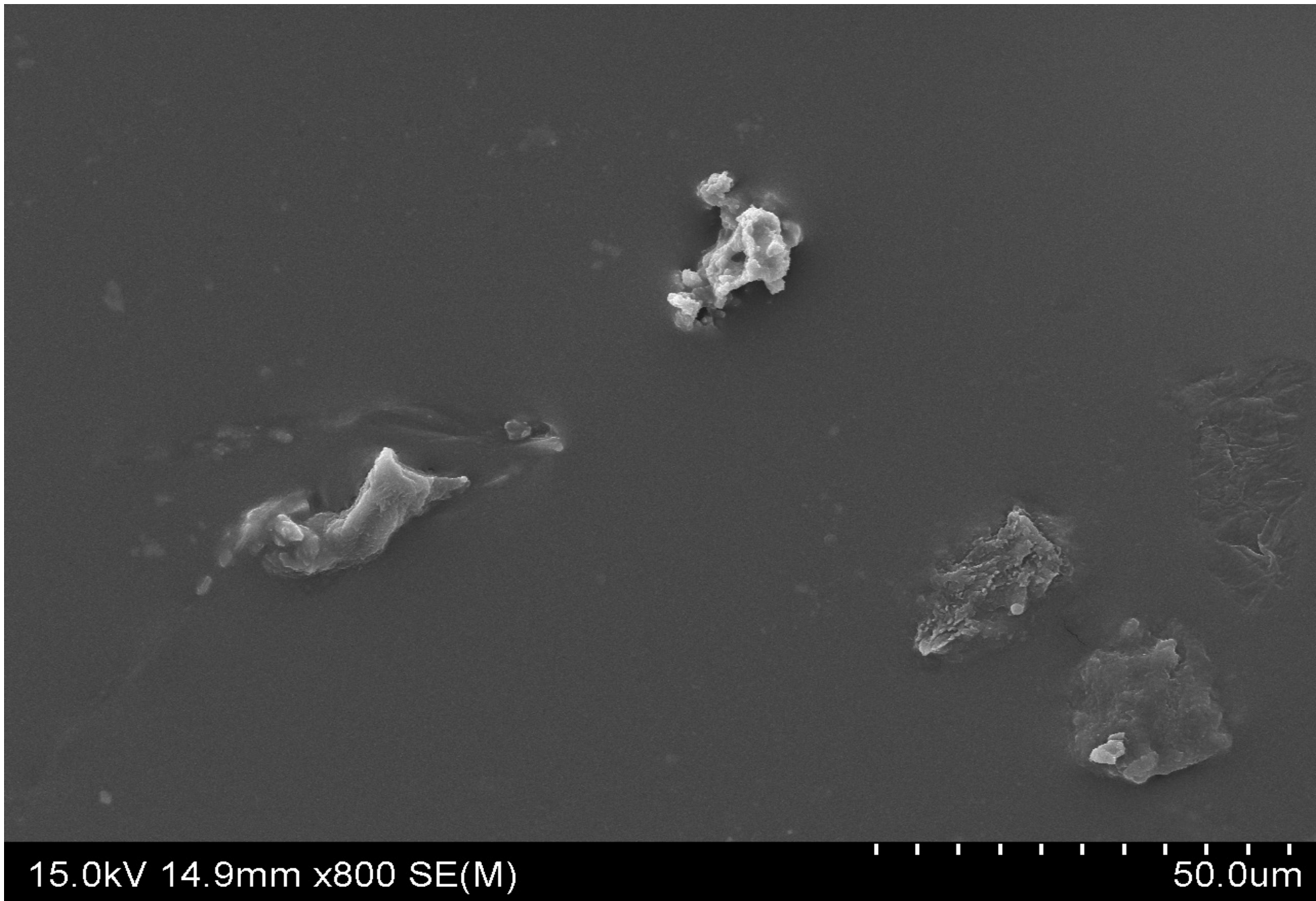


Image 78. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

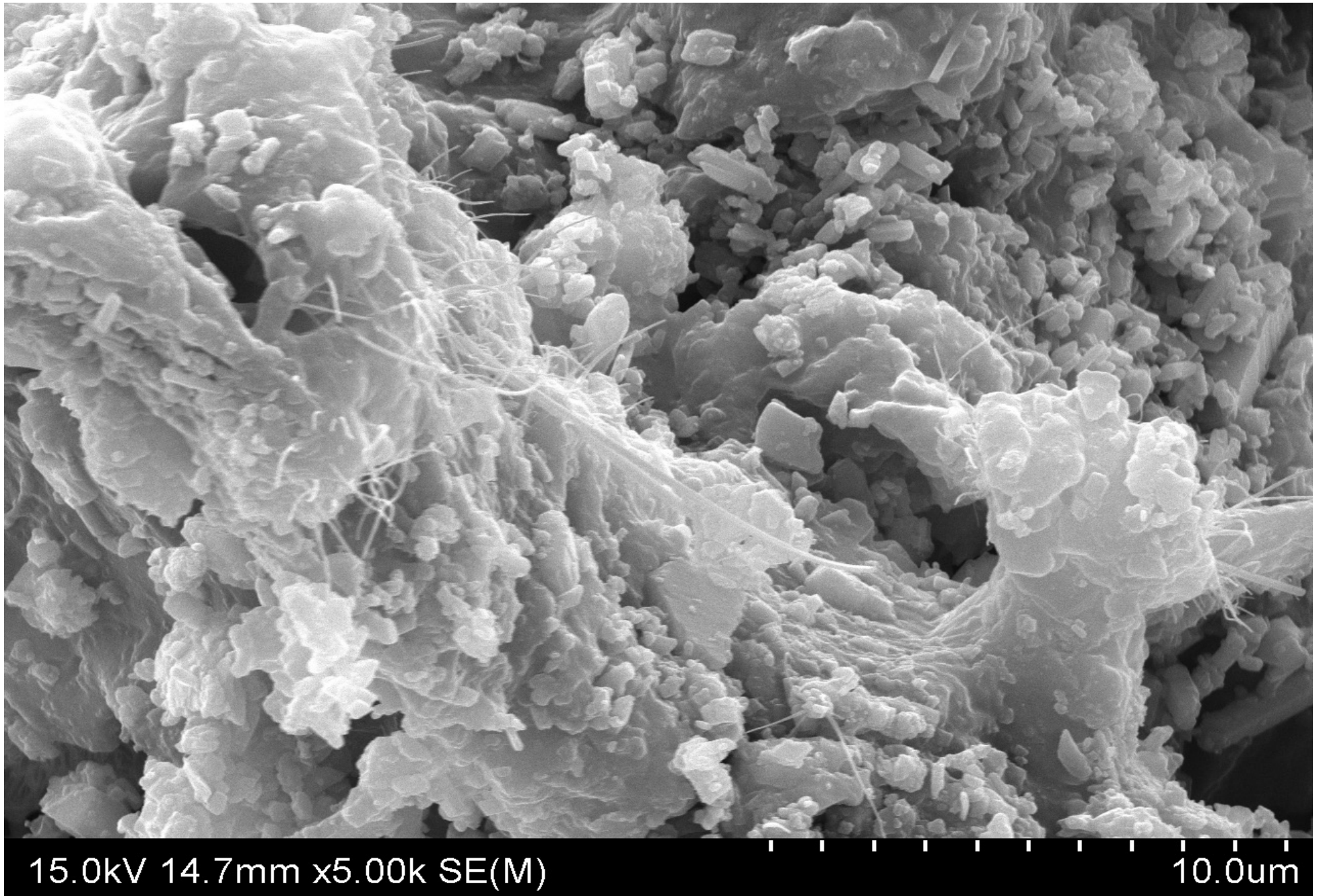


Image 79. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

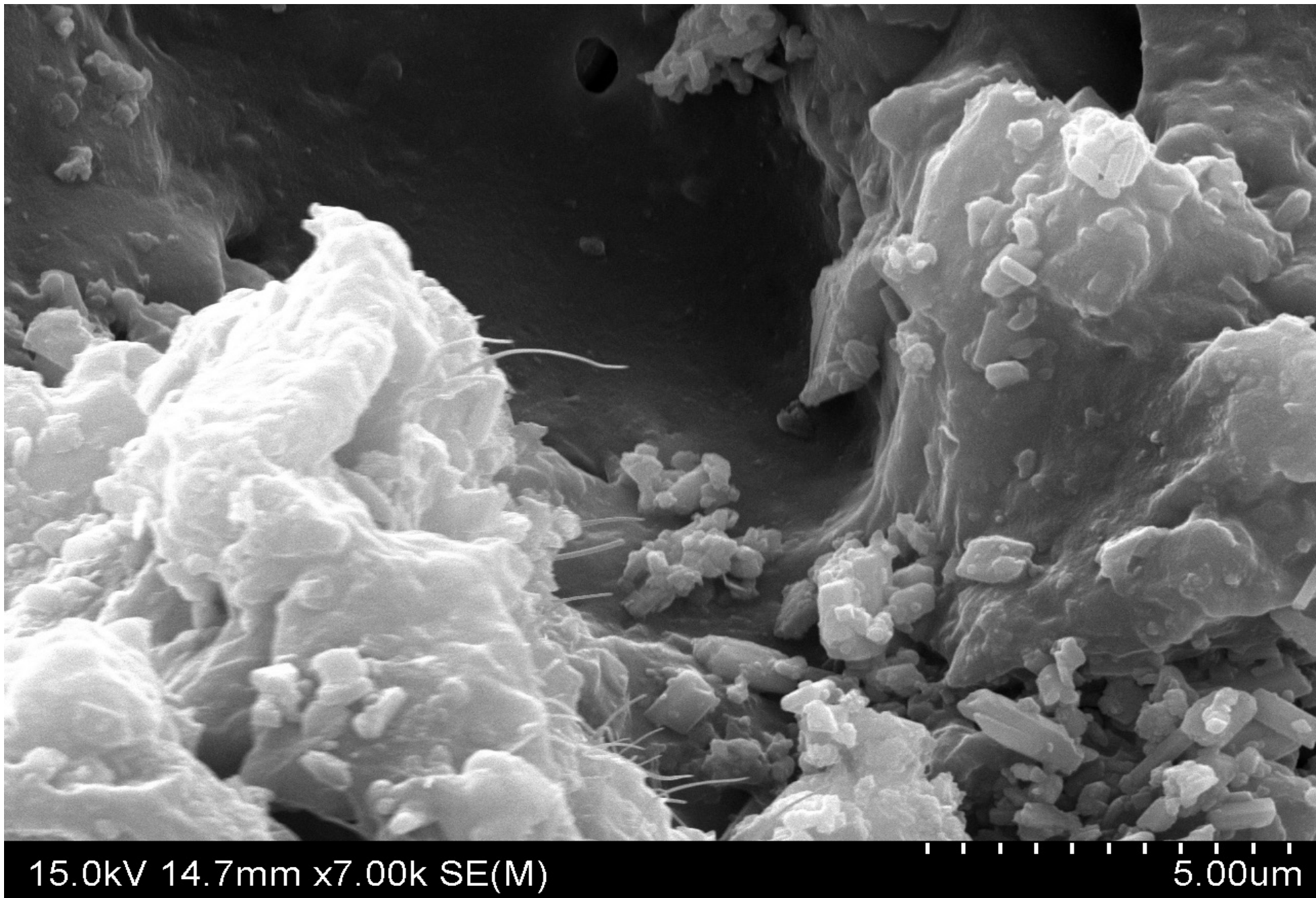


Image 80. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

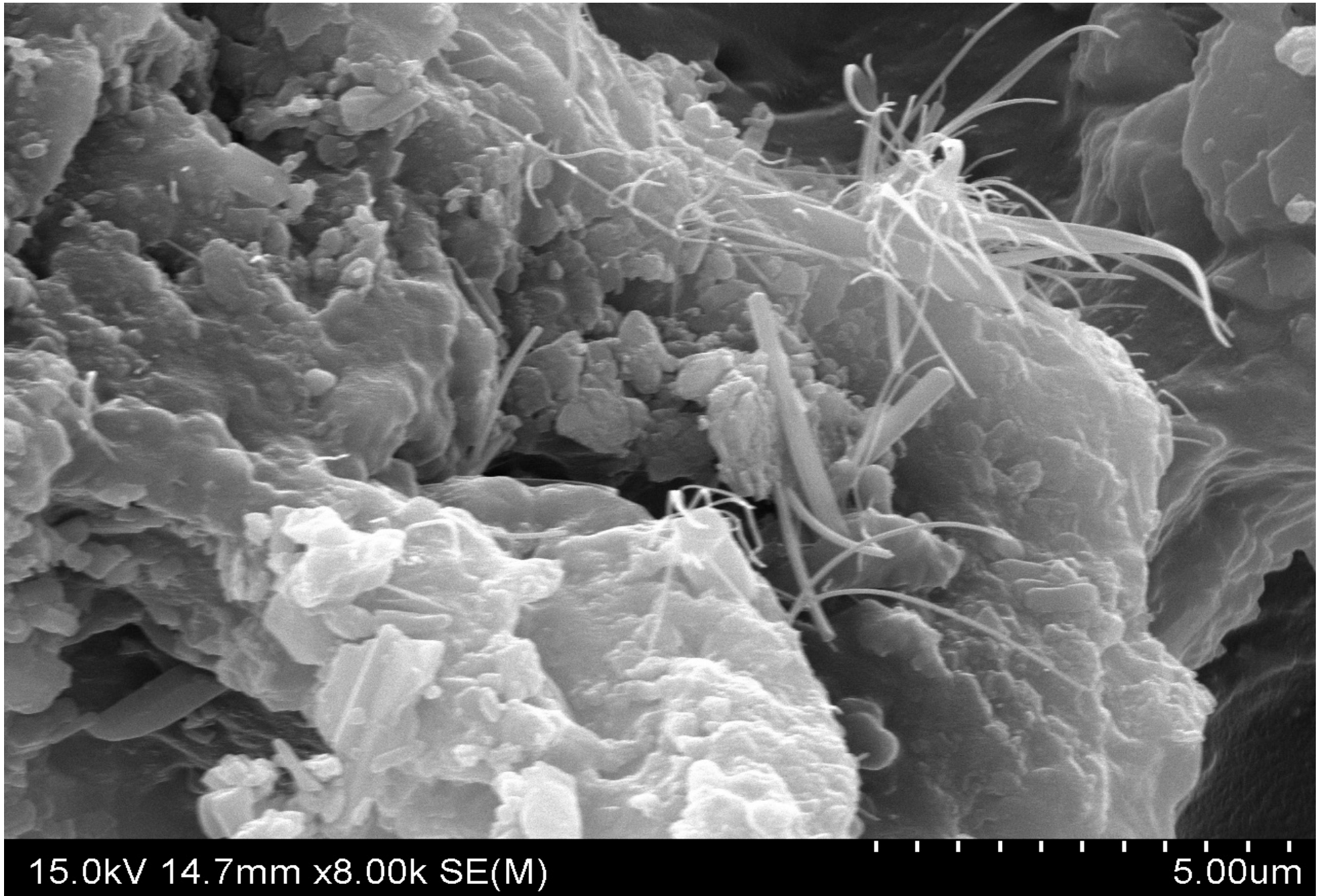


Image 81. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

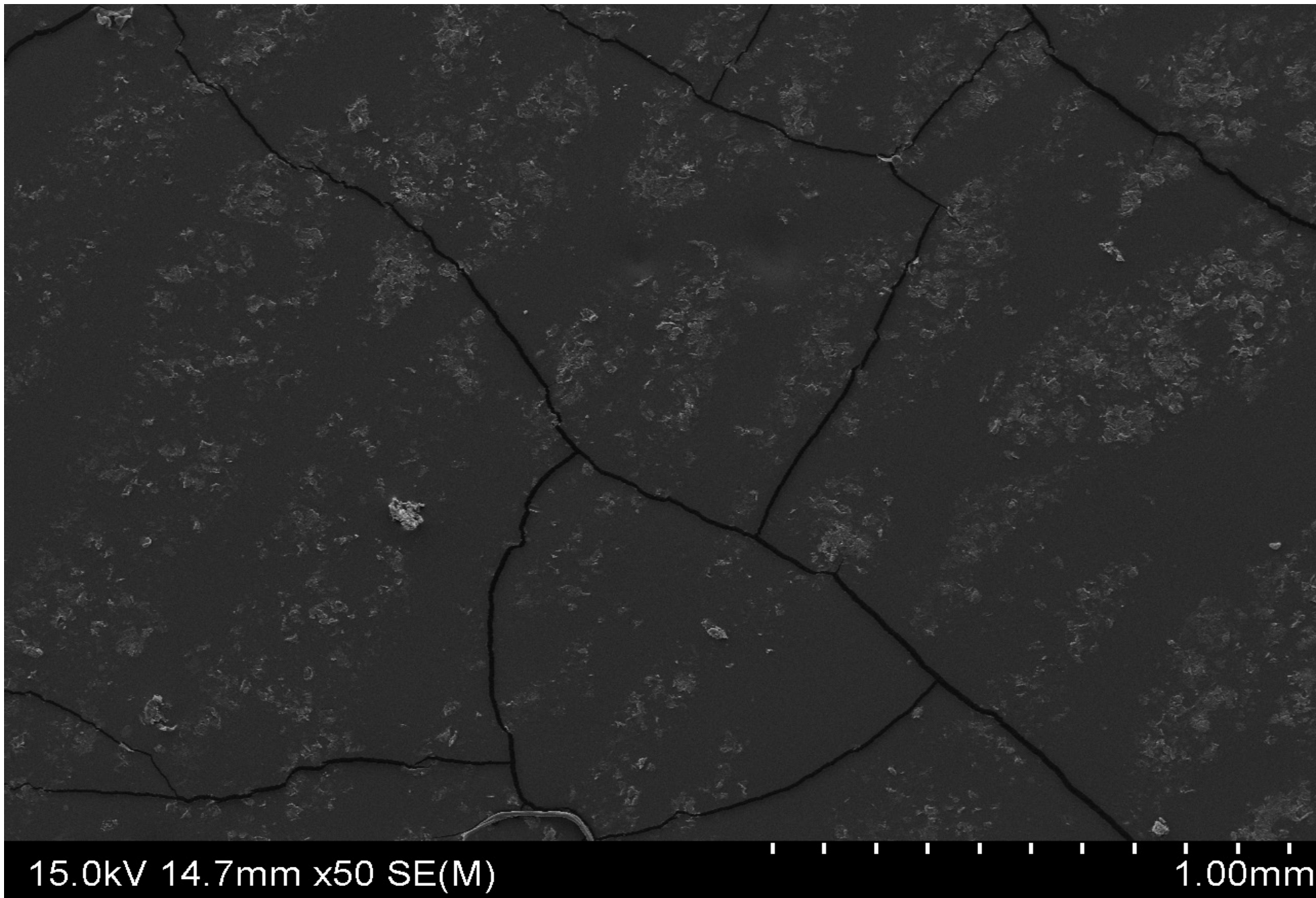


Image 82. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

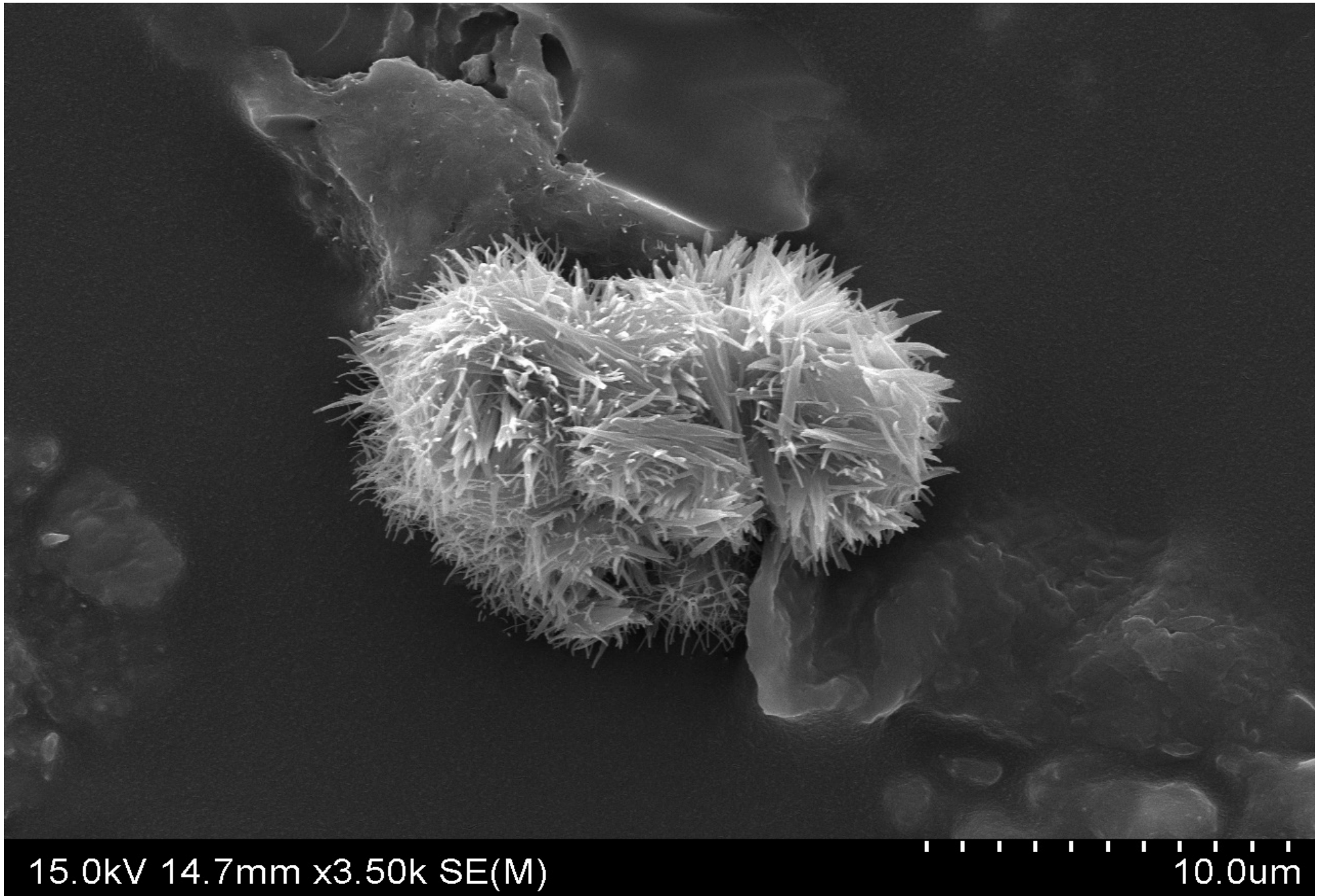
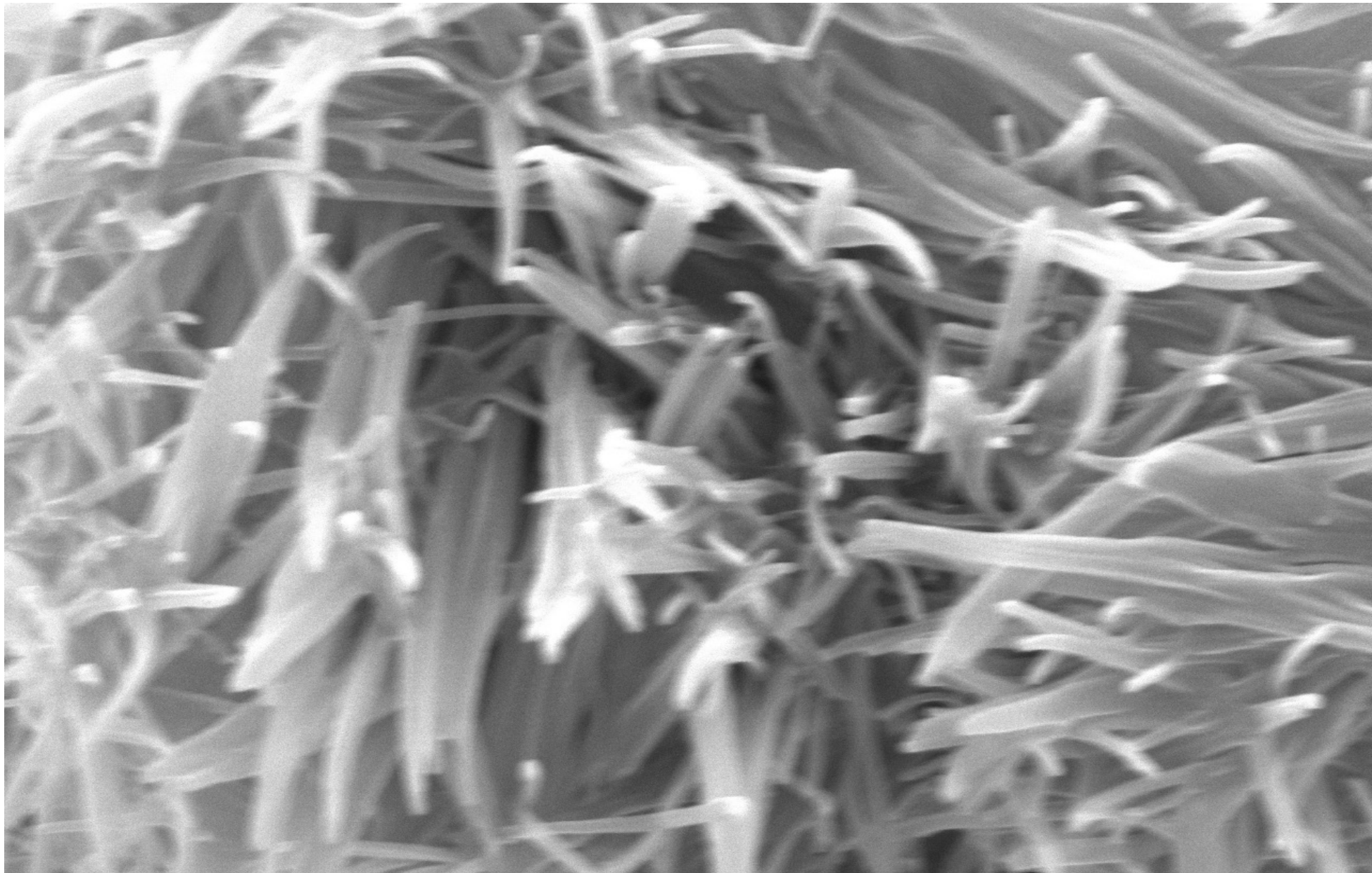


Image 83. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*



15.0kV 14.7mm x22.0k SE(M)

2.00um

Image 84. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

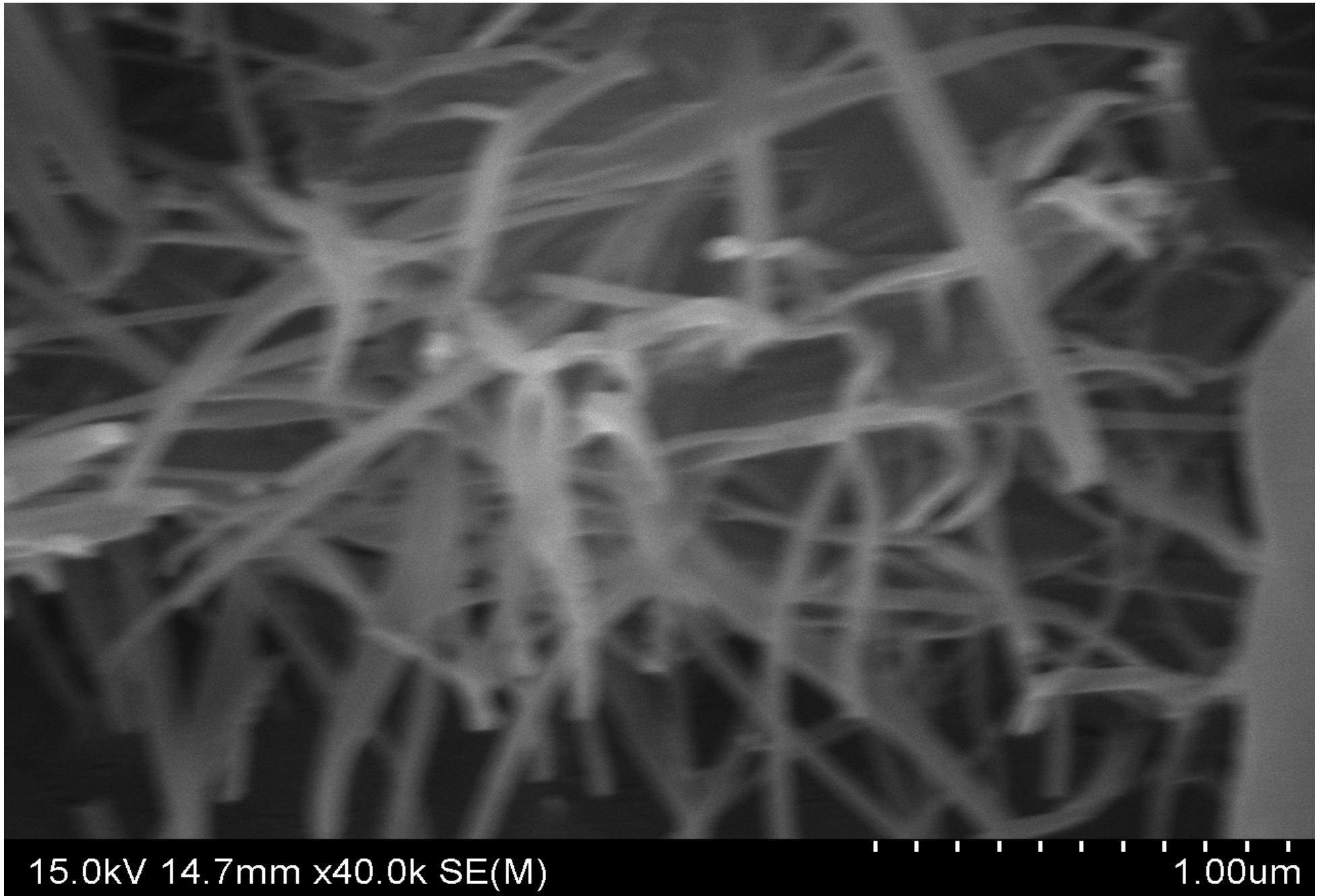


Image 85. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

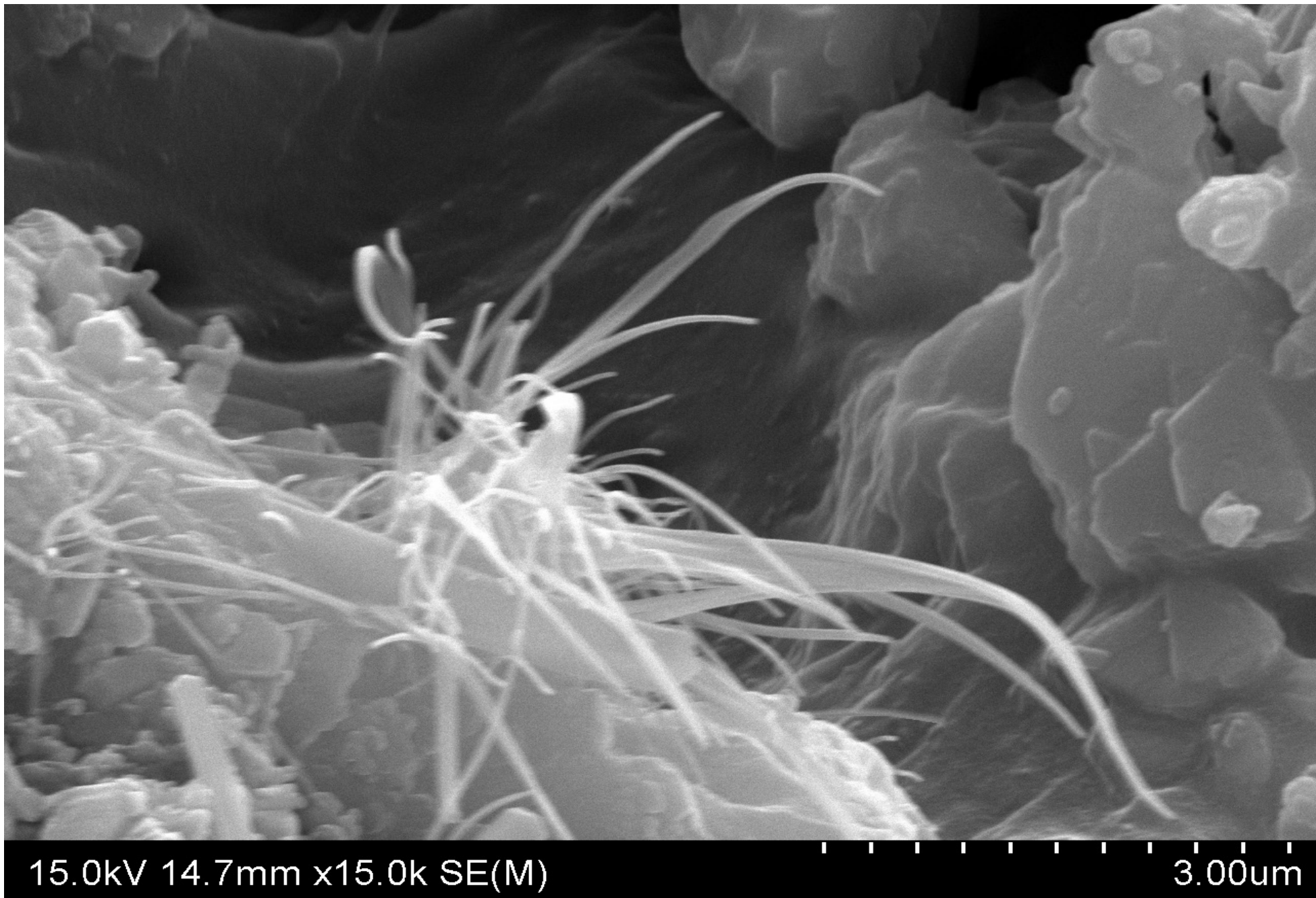


Image 86. SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.

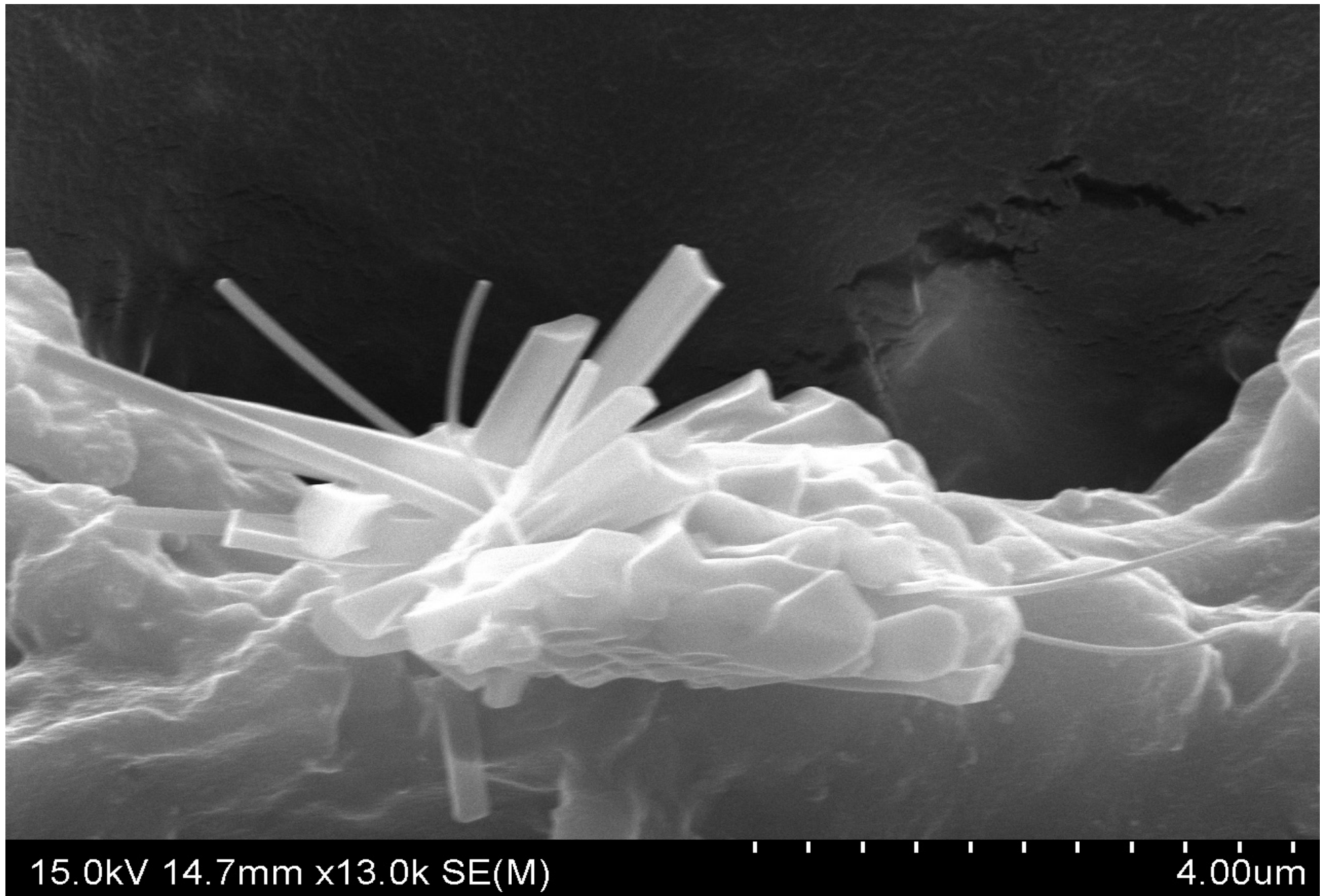


Image 89. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

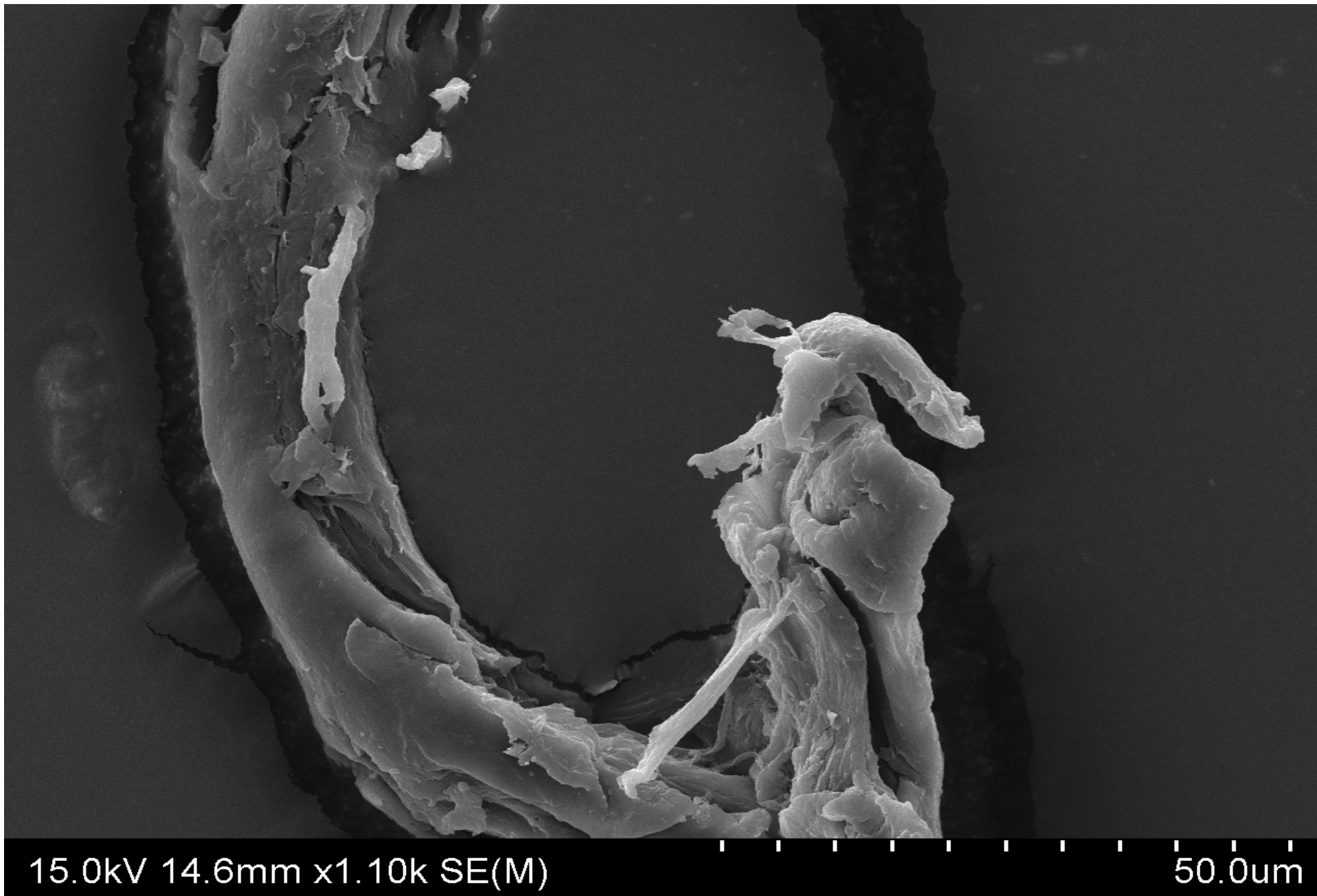


Image 88. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

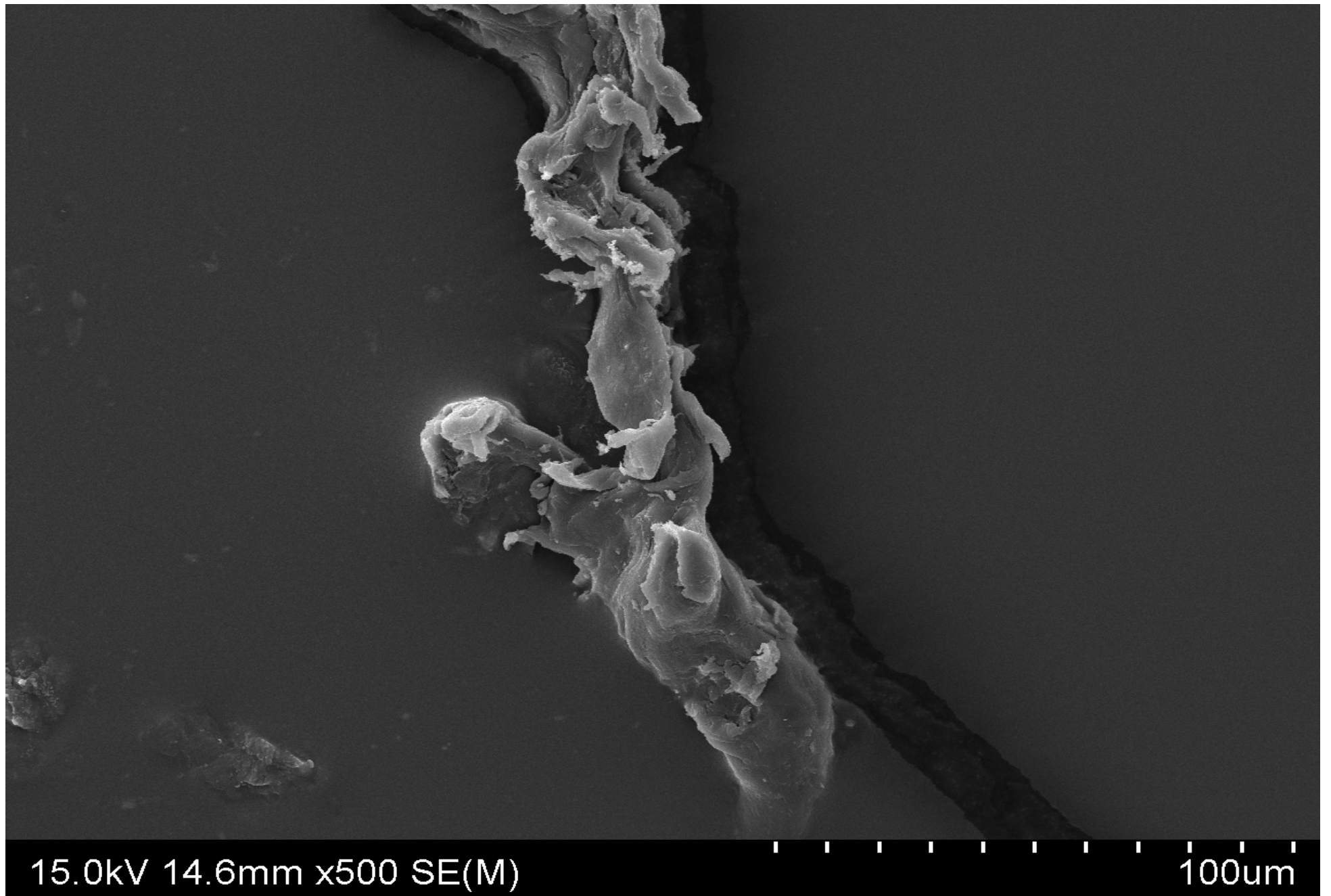


Image 89. *SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery, 2025.*

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Images List

Image 1. , <i>Handbuilt Tea Cups for Examiners</i> , 2025.	8	Image 16. <i>The Scanning Electron Microscope SE(M)</i> , 2025. 2:41 PM.	21
	9		
Image 2. <i>First Image of Daphnia Bugs in Recycled Clay</i> , 2022. Taken 3 October 4:28 PM.	9	Image 17. <i>Methods of Transporting SE(M) Samples</i> , 2025. Ceramic plate handbuilt from recycled clay, blue-tac and SE(M) samples.	22
Image 3. <i>MVA Students Celebrating Daphnias's 3rd Birthday</i> , 2024. Ceramic Vessels, handmade paper and Daphnia.	10	Image 18. <i>Daphnia observed with the SE(M)</i> , 2023. 29 March, 12:36 PM.	23
Image 4. <i>MVA Students Celebrating Daphnias's 3rd Birthday</i> , 2024. With take-away photopolymer etch ephemera.	10	Image 19. <i>Daphnia Hair Follicles</i> , 2023. SE(M) image, 29 March, 12:36 PM.	24
Image 5. <i>Daphnia Bugs in Ceramic Bowl</i> , 2024.	10	Image 20. <i>Fungus Found on Daphnia</i> , 2023. SE(M) image, 29 March, 12:36 PM.	25
Image 6. <i>Photopolymer Etching Ephemera</i> , 2024. SE(M) image made from Four Years' Worth of Flowers paper.	11	Image 21. <i>Collection Bowl with all the Offerings</i> , 2023. Ceramic bowl, SE(M) images of recycled clay.	27
Image 7. <i>SE(M) Atmospheric Sample</i> , 2024. Mounted to the studio wall, W 1.5cm x H 2cm.	12	Image 22. <i>Handmade Recycled Clay Tea Cups</i> , 2023. Supporting an offering of kawakawa, ginger and lemon balm teas.	28
Image 8. Natalie Tozer, <i>Companion Pieces</i> , 2021. canvases buried in artists garden.	13	Image 23. Hand Holding Tea Cup, 2023.	28
Image 9. Gabriel Orozco, <i>Yeilding Stone</i> , 1992. Plasticine ball on New York street.	14	Image 24. <i>Hand Holding Tea Cup</i> , 2023.	28
Image 10. <i>Collecting Uku</i> , 2023. Collecting uku from State Highway 1, 28 February 9:04 PM.	15	Image 25. <i>Dried Fungus Grown from the Collection Bowl Offerings</i> , 2023. SE(M) image, 18 May, 1:29 PM.	29
Image 11. <i>Baby Leaf Sprouts</i> , 2024. 26 January, 12:24 PM.	16	Image 26. Kate Newby, <i>YES TOMORROW</i> , 2020. Participants clay shin casts, Adam Art Gallery.	30
Image 12. <i>Baby Leaf Sprouts First New Leaf</i> , 2024. 11 March. 2:41 PM.	17	Image 27. Laresa Kosloff, <i>CAST</i> , (with Jennifer Allora, Hany Armanious, Richard Bell, Karla Black, Christian Boltanski, Mikala Dwyer, Dora Garcia, Charles Green & Lyndell Brown, Thomas Hirschhorn, Anastasia Klose, David Noonan, Michael Parekowhai, Grayson Perry, Stuart Ringholt, Renee So, Kathy Temin, Luc Tuymans, Angel Vergara, Catherine de Zegher) 2011.	30
Image 13. <i>Ferns Grown from Pakiri Uku</i> , 2025. SE(M) image, 14 April, 1:18 PM.	18	Image 28. <i>Sound Wave Glimmers</i> , 2023. Charged SE(M) image of glaze fired Pakiri uku, 18 May, 1:29 PM.	31
Image 14. <i>Recycled Clay Your Cup is Made from</i> , 2025. SE(M) image, lots of Diatoms, 10 March, 10:09 AM.	19	Image 29. <i>Glaze Fired Pakiri Uku</i> , 2023. SE(M) image, 18 May, 1:29 PM.	32
Image 15. <i>Recycled Clay Your Cup is Made from</i> , 2025. SE(M) image, lots of Diatoms, 10 March, 10:09 AM.	20	Image 30. <i>Spooky Action at a Distance Paper Cracking via Charging</i> , 2023. Charged SE(M) image, 31 July, 1: 58 PM.	35

Image 31. Ruby 常潔 White, GAP [黄馨贤박성환常潔] FILLER, 2023. Pàocài tǎn, ceramic water-sealed pickling jars.	37	Image 47. <i>Funeral Flowers</i> , 2024. Dried.	47
Image 32. <i>Handmade Paper Bound SE(M) Image Books</i> , 2023. Stacked and inviting participants collection, active SE(M) sample above. BVA graduating exhibition Te Wai Ngutu Kākā Gallery.	38	Image 48. <i>Brownie Cake Eaten by Lecturers</i> , Image courtesy of Monique Redmond, 2024.	48
Image 33. <i>Handmade Paper Bound SE(M) Image Books</i> , 2023. SE(M) images of a broken Daphnia body.	38	Image 49. <i>Four Years Worth of Flowers</i> , 2024 . SE(M) images of Four Years' Worth of Flowers, paper atmospheric sample mounted to the wall, AUT Talk Week Critique. 25 July.	51
Image 34. <i>Atmospheric Sample from Te Wai Ngutu Kākā Gallery</i> , 2023. SE(M) image.	39	Image 50. <i>Four Years Worth of Flowers Paper Hand Bound into Books</i> , 2024. Given away at AUT Talk Week critique.	51
Image 35. Fiona Hillary, <i>Pyrocistis Lunula I</i> , 2021. Image of dinoflagellates.	41	Image 51. Photo Courtesy of Mori Art Museum, Photo by Yoshitsugu Fuminari, LEE Mingwei: <i>The Moving Garden Project</i> , 2009-present. Installation View of <i>Lee Mingwei and His Relations: The Art of Participation</i> , Mori Art Museum, Tokyo, Japan 2014.	52
Image 36. Sarah Anne Featon, Mānuka, 1875. Water colour of manuka flowers.	41	Image 52. <i>Pears shared in studio on a Plate Made with Emelia Clay</i> , 2024. 25 March, 11:31 AM.	55
Image 37. <i>Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample Charging</i> , 2025. SE(M) image, 19 March 10:49 AM.	42	Image 53. <i>Exhibition Invitation & Information</i> , photo courtesy of Monique Redmond, 2025	56
Image 38. <i>Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample Charging</i> , 2025. SE(M) image, 19 March 10:49 AM.	43	Image 54. <i>Handmade Cups and Ginger Tea for the Examiners</i> , photo courtesy of Monique Redmond, 2025.	56
Image 39. <i>Four Years' Worth of Flowers Paper, Talk Week Atmospheric Sample</i> , 2025. SE(M) image, 19 March 10:49 AM.	44	Image 55. <i>Ceramic Bands</i> , photo courtesy of Paul Chapman, 2025.	57
Image 40. <i>Graduation Flowers</i> , 2024. Cut up.	45	Image 56. <i>Ceramic Bands, SE(M) Atmospheric Sample, Photopolymer Prints</i> , photo courtesy of Monique Redmond, 2025.	58
Image 41. <i>Funeral Flowers Steeping</i> , 2024.	46	Image 57. <i>Photopolymer Print</i> , photo courtesy of Paul Chapman, 2025.	59
Image 42. <i>Funeral Flowers</i> , 2024. Paper	47	Image 58. <i>Photopolymer Prints Installed Te Wai Ngutu Kaka Gallery</i> , photo courtesy of Paul Chapman, 2025.	60
Image 43. <i>Everything Flowers</i> , 2024. In the blender.	47	Image 59. <i>Photopolymer Prints Installed Te Wai Ngutu Kaka Gallery</i> , photo courtesy of Paul Chapman, 2025.	61
Image 44. <i>Everything Flowers</i> , 2024. Blended.	47	Image 60. <i>Photopolymer Prints</i> , photo courtesy of Paul Chapman, 2025.	62
Image 45. <i>Everything Flowers</i> , 2024. Paper.	47		
Image 46. <i>Graduation Flowers</i> , 2024. Paper.	47		

Image 61. <i>Photopolymer Prints</i> , photo courtesy of Paul Chapman, 2025.	62	Image 81. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	75
Image 62. <i>Re-hanging new Photopolymer Prints</i> , photo courtesy of Paul Chapman, 2025.	62	Image 82. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	76
Image 63. <i>SE(M) Atmospheric Sample Collecting</i> , photo courtesy of Monique Redmond, 2025.	62	Image 83. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	77
Image 64. <i>Daphnia on the Bus</i> , 2025.	63	Image 84. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	78
Image 65. <i>Daphnia in Awa</i> , 2025.	63	Image 85. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	79
Image 66. <i>Daphnia in Awa</i> , 2025.	63	Image 86. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	80
Image 67. <i>Daphnia in Water Trough</i> , 2025.	63	Image 87. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	81
Image 68. <i>Daphnia in Pond</i> , 2025.	63	Image 88. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	82
Image 69. <i>Daphnia in Awa</i> , 2025.	63	Image 89. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	83
Image 70. <i>Daphnia in Pond</i> , 2025.	64		
Image 71. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	65		
Image 72. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	66		
Image 73. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	67		
Image 74. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	68		
Image 75. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	69		
Image 76. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	70		
Image 77. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	71		
Image 78. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	72		
Image 79. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	73		
Image 80. <i>SE(M) Atmospheric Sample Te Wai Ngutu Kākā Gallery</i> , 2025.	74		

Handmade Paper List

Included as inserts in the print copy and as scans, both sides, in the PDF.

Talk Week SE(M) Image Paper of Four Years' Worth of Flowers

Spooky Action at a Distance Paper

Four Years' Worth of Flowers Paper

Next page insert: Talk Week SE(M) Image Paper of Four Years' Worth of Flowers

