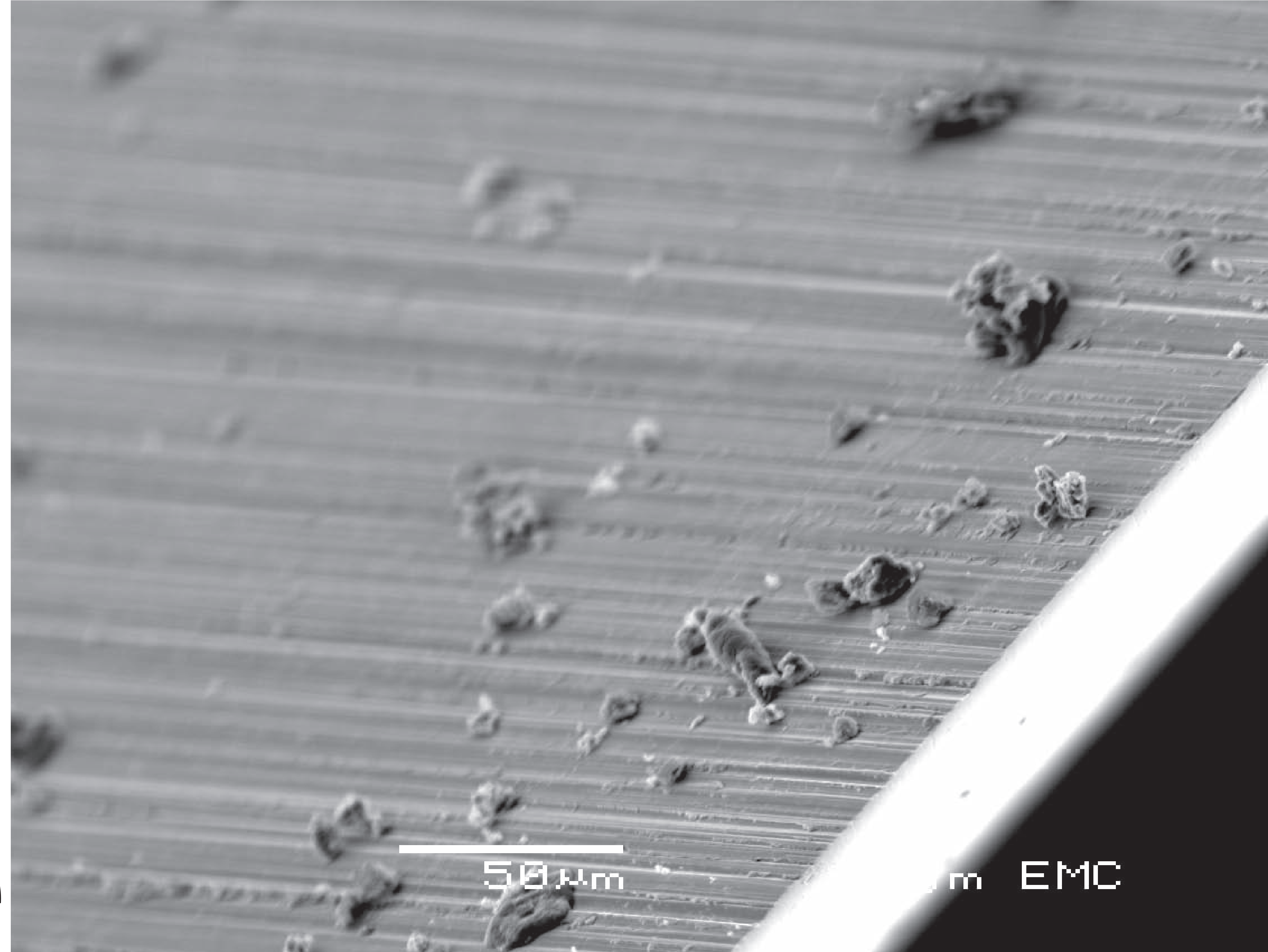


Out of Scale

Powers of Ten⁻⁹m



Wayne Hemingway
Ron Arad Associates
Feilden Clegg Bradley
dRMM
Richard Rogers Partnership
Caruso & St.John Architects
Will Alsop Architects
Sana Murrani
GHM Consultancy Group
Rick Mather Architects
Henning Larsens Tegnestue
Peter Anders
Maia Engeli
Liminal
Jonathan Wright Projects
Arch-OS



Architecture
Week 2004
The Way We Live

PLYMOUTH ARTS CENTRE

www.i-dat.org



University of Plymouth
Electron Microscopy Centre

Dear Architect,

This is an invitation to submit an object that will be scanned by an Electron Microscope.

The scanned images will be blown up to A0 size and exhibited in the Out of Scale show at the Plymouth Arts Centre along with your fragment that will have been gold plated to enable the object to provide a consistent electronic image.

Out of Scale explores architecture's relationship with image, digital technology and place by focusing upon the microscopic. The show intends to reveal the unusual relationship that architects have with scale; how the digital systems and measuring tools transform models of actuality, from the closest architectural detail to the largest plan drawings.

Your object and its image will be presented alongside *Powers of Ten* (1977) © 2004 LUCIA EAMES, EAMES OFFICE (www.eamesoffice.com), the short film by the architectural designers Ray and Charles Eames. This film is a pivotal work that embodies architecture's relationship with people, space and our perception of scale.

We are interested in accepting the smallest objects that architects and their offices can think of. You may want to choose an object that relates to your experience of scale within architecture and the practice of designing buildings and structure. The fragment may have come from a particular site that you are working on, your studio where your practice is based or even from the people that you work with.

All we require is for you to send a fragment or item that is no bigger than 10mm in diameter to the following address:

Chris Speed, i-DAT, University of Plymouth, Drake Circus, Plymouth PL4 8AA

The show will feature your object at 1:1, coated in gold and mounted on to the aluminium stub that was inserted into the electron microscope and a large digital print of the object at 1:10⁻⁹m.

Please do not send 'wet' or 'moist' objects as they are likely to perish during the gold coating process. For further information please contact Chris Speed cspeed@plymouth.ac.uk or telephone 01752 232613.

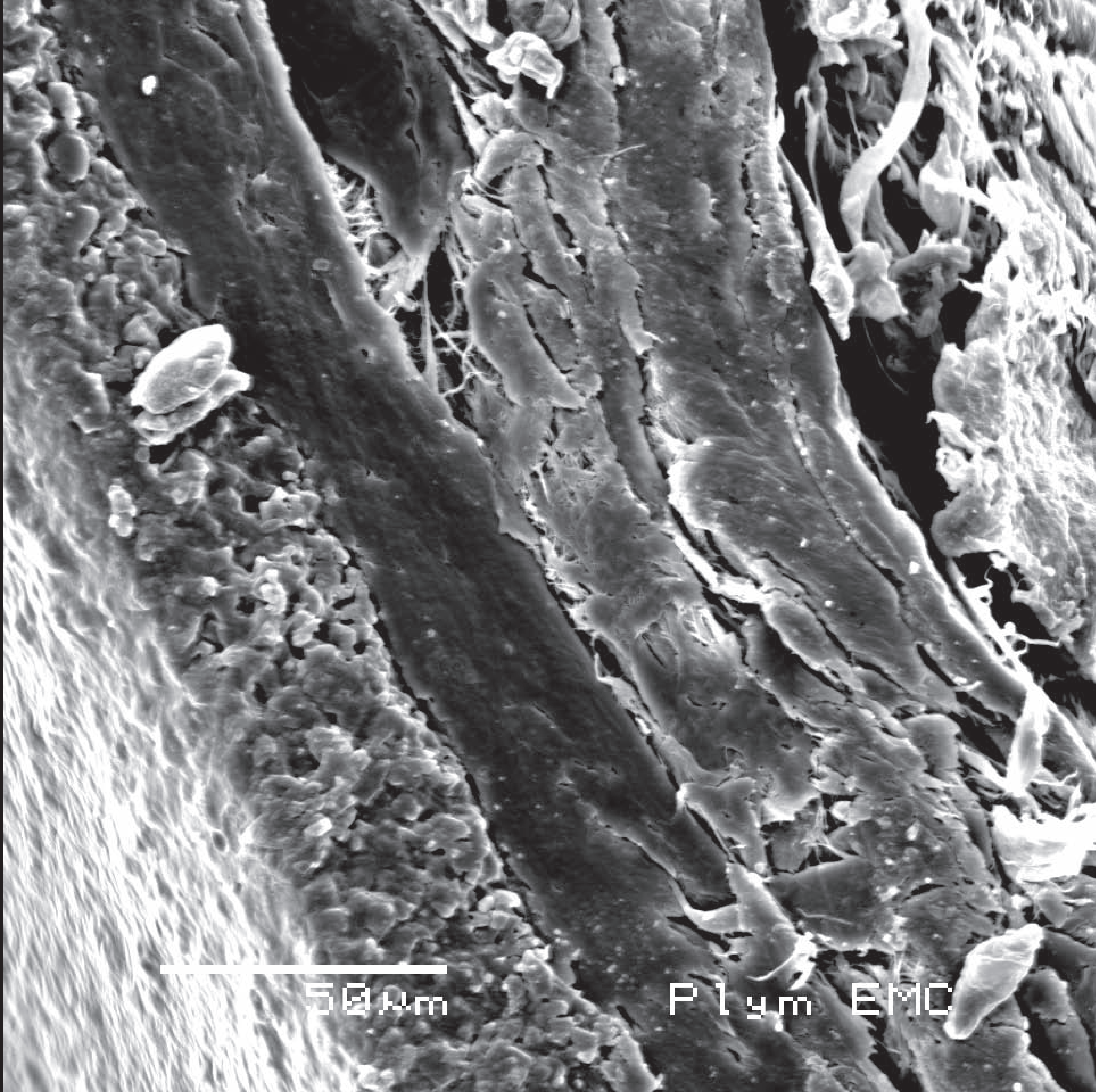
Out of Scale

Powers of Ten⁹m



The exhibition was developed for Architecture Week 2004 by Plymouth Arts Centre and the Institute of Digital Art and Technology.

The show would not be possible without the skills and expertise of Glenn Harper and all at the University of Plymouth's Electron Microscopy Centre.



Out of Scale

Powers of Ten ⁹m



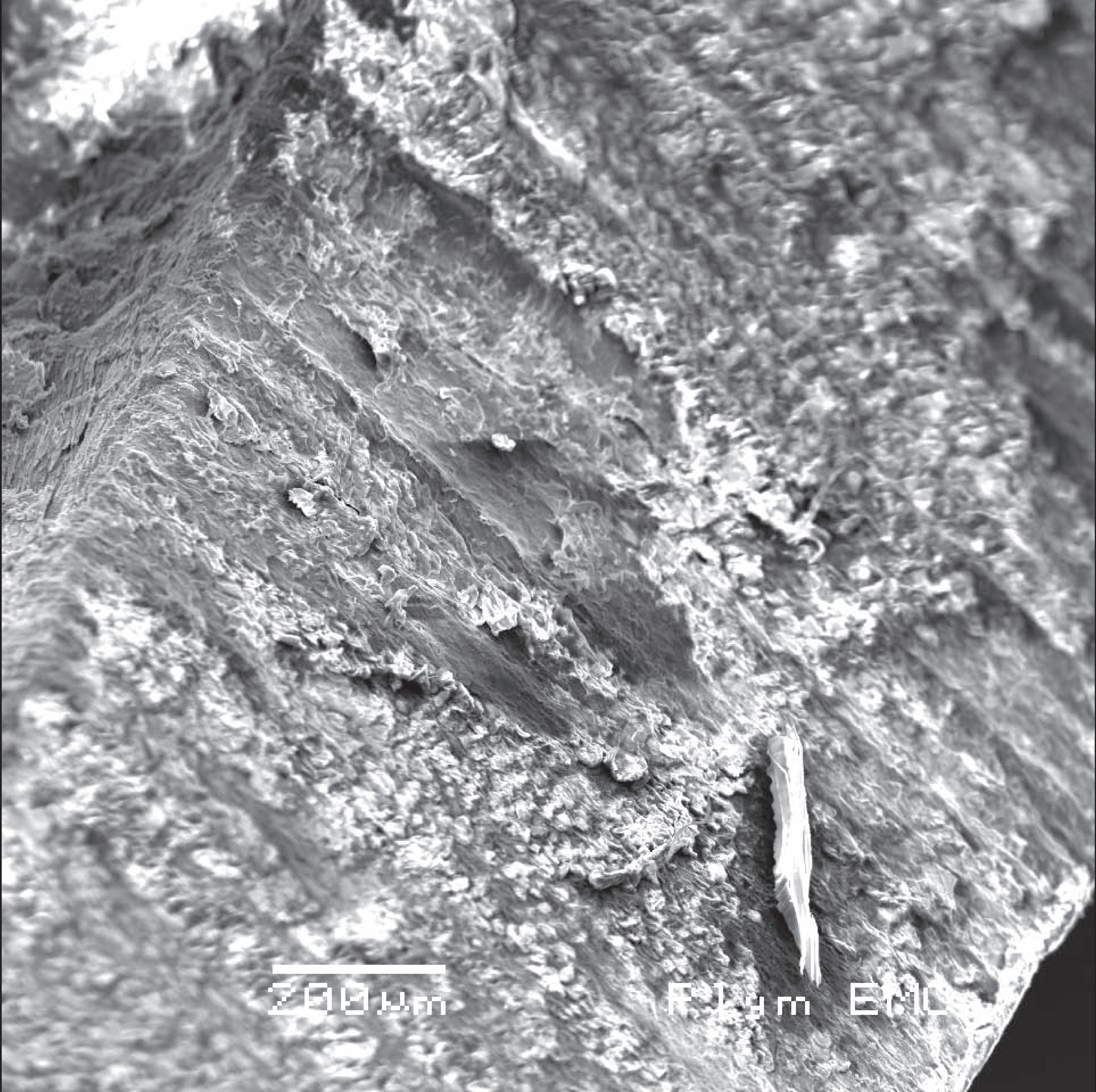
50 μ m

Plym EMC

Will Alsop

Acrylic Paint

"The idea is based on the fact that pretty much every single project in our office starts off with a painting from Will. So, in a sense, a splotch of paint represents the smallest particle / the atom of the "Alsop World".



Out of Scale

Powers of Ten ⁹m



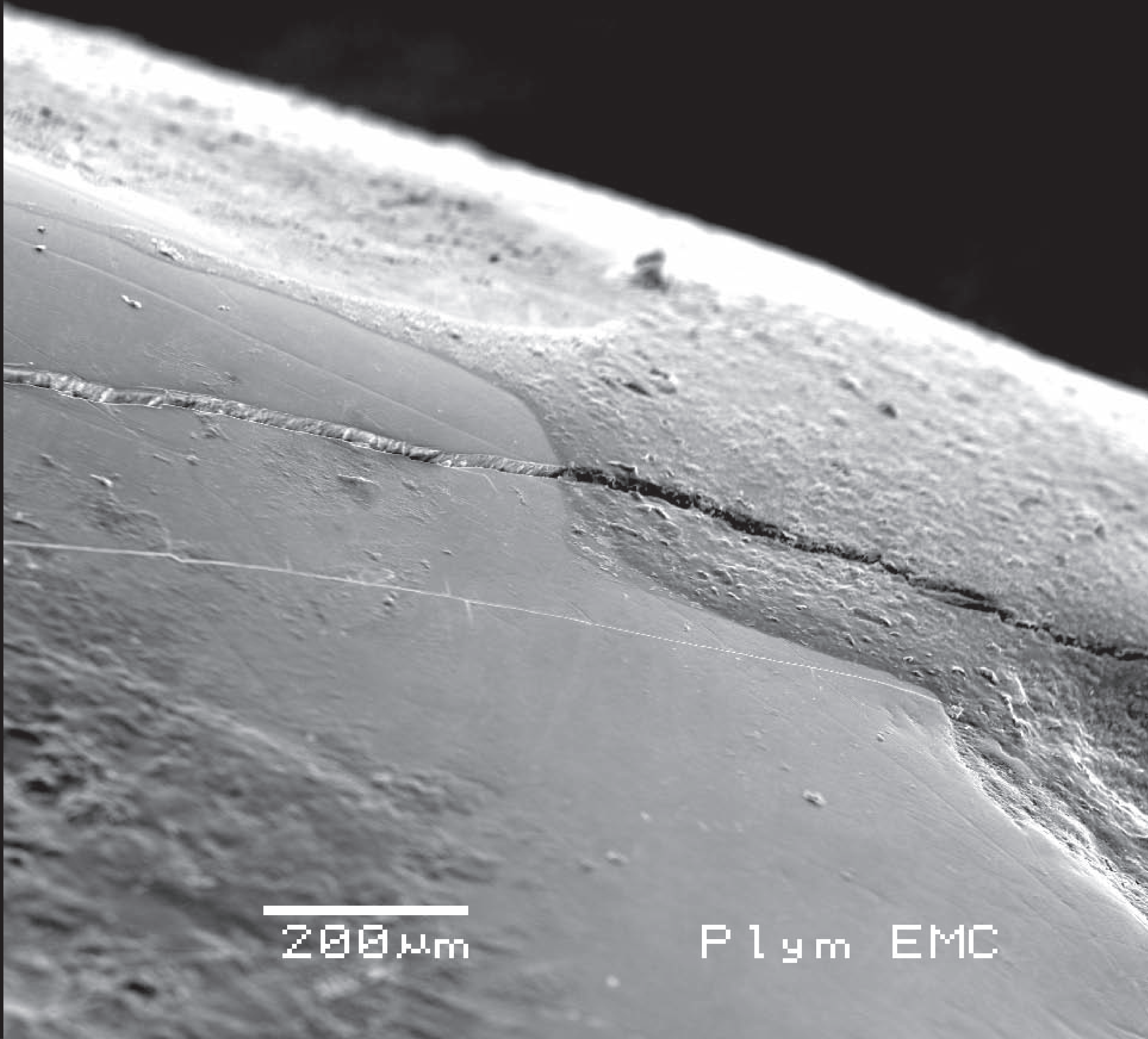
200µm

1µm

Peter Anders

Fingernail

"Trim the leftmost fingernail of the left hand while standing on left foot, with right eye closed. This should be done while standing on axis of the nave of a (preferably old) place of worship. The nave should be symmetrical. The label on the exhibit should show the process. That should do it. (This has to do with material/spiritual duality in ritual)."



200µm

P l y m E M C

Out of Scale

Powers of Ten ⁹m

PLYMOUTH ARTS CENTRE

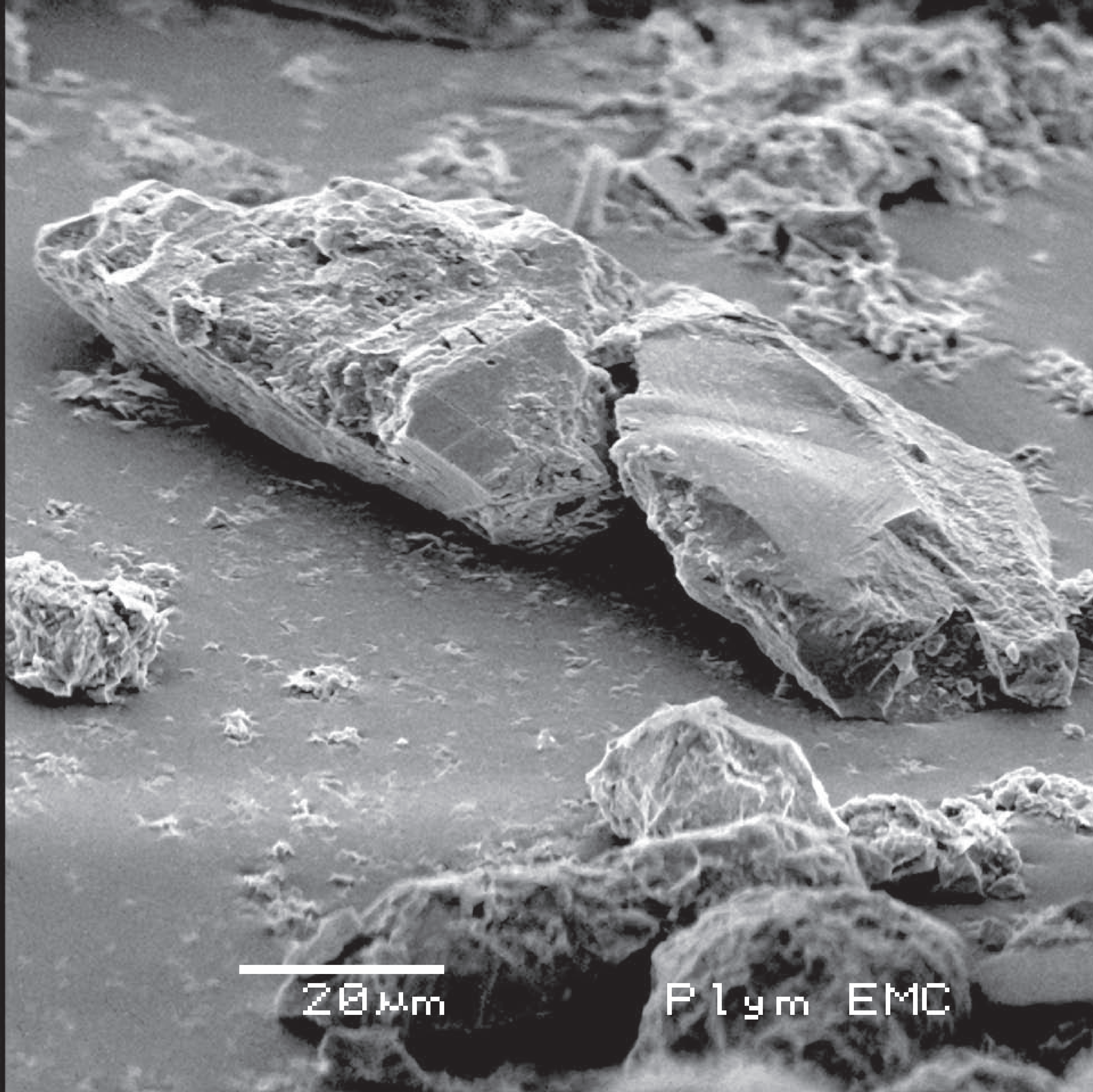
Maia Engeli

Tooth

"In Switzerland there is this saying (maybe it exists in English as well):

once upon a time there was a man with a hollow tooth and in this tooth there was a little box and in this box there was a letter and in this letter was written: once upon a time there was a man with a hollow tooth and in this tooth there was a little box and in this box there was a letter and in this letter was written: once upon a time there was a man with a hollow tooth and in this tooth there was a little box and in this box there was a letter and in this letter was written: ...

I like this idea because of the cultural aspect (it is a very old saying, I learned it from my grandmother), the recursive aspect (fits well alongside with powers of ten), the scale aspect, the imaginary aspect, the space aspect..."



Out of Scale

Powers of Ten ⁹m



PLYMOUTH ARTS CENTRE

PLYMOUTH UNIVERSITY

20µm

Plym EMC

Thomas Heatherwick Studio

Grain of sand

Since Jan 2004, Thomas Heatherwick Studio has been working to develop a café and exhibition building for Grange over Sands in the Lake District.

The sands, from which the area takes its name are now covered in grass. The team used electron-microscopic images of a single grain of sand taken from beneath the grasses to inform the design.

Out of Scale

Powers of Ten ⁹m



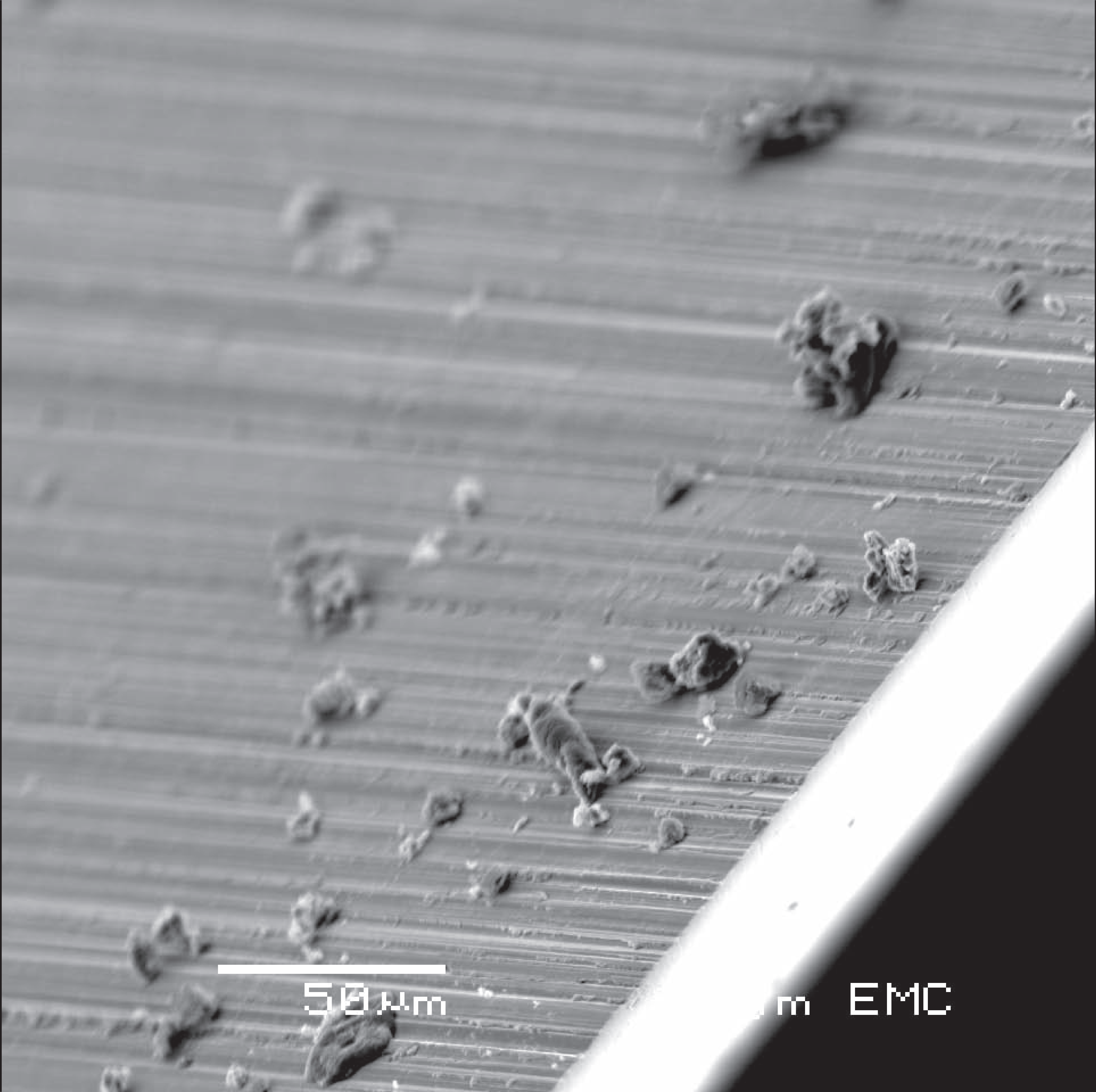
100µm

Plymouth EMC

Liminal

The silence between tracks on a vinyl record

"We would like you to take a microscopic scan of the silence between tracks on a vinyl record. What the record is, is not important but preferably it should be something old enough to have a bit of dust on it illustrating that the 'silence' isn't really silence at all."



50 μ m

100 μ m EMC

Out of Scale

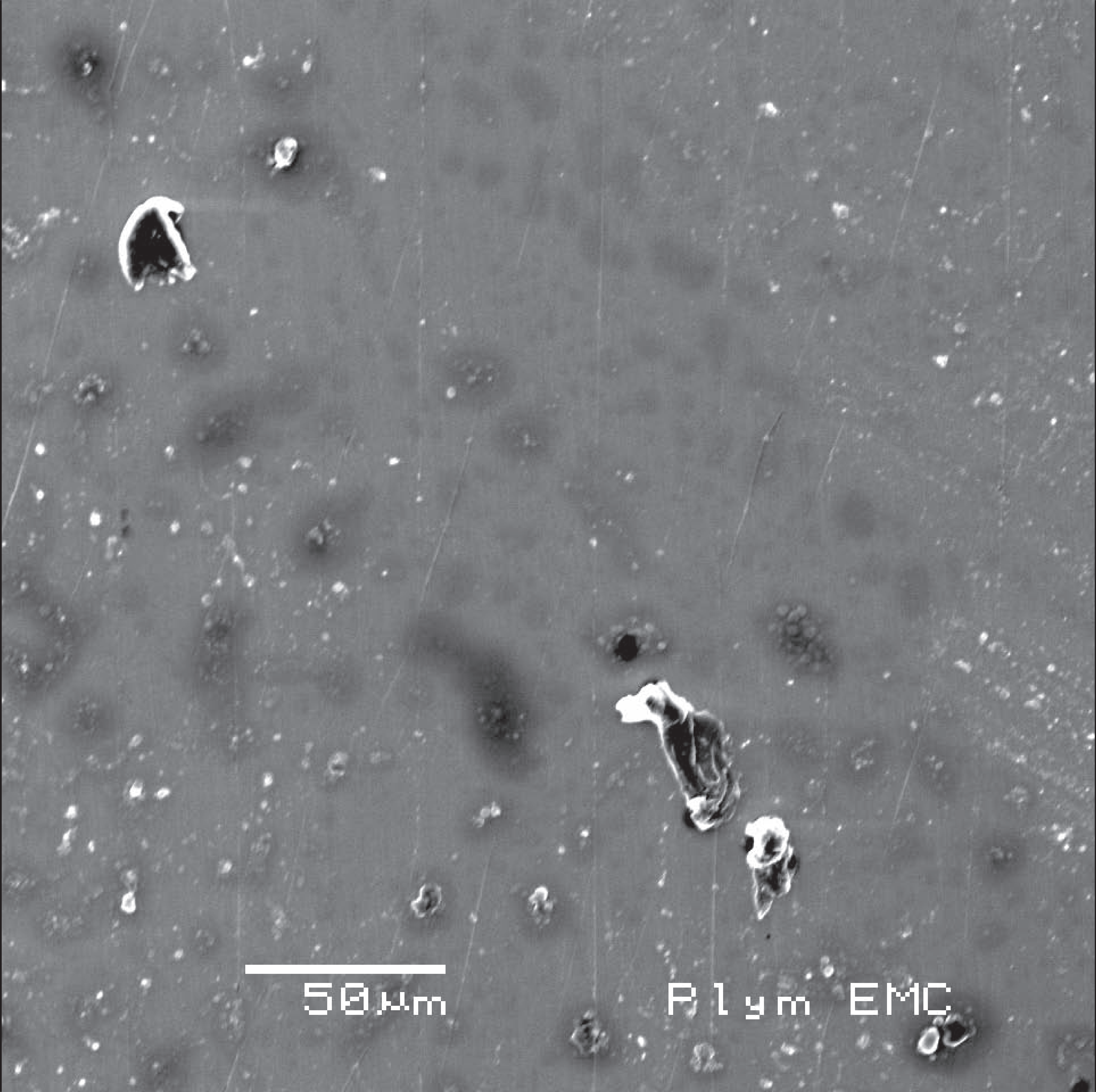
Powers of Ten ⁹m



Jonathan Wright Projects

Scalpel

"The idea is that very thin objects are typically perceived as having only two surfaces. By focussing upon the edge of a scalpel blade we are reminded that even at its narrowest point the object is three dimensional."



Out of Scale

Powers of Ten ⁹m



50µm

Plym EMC

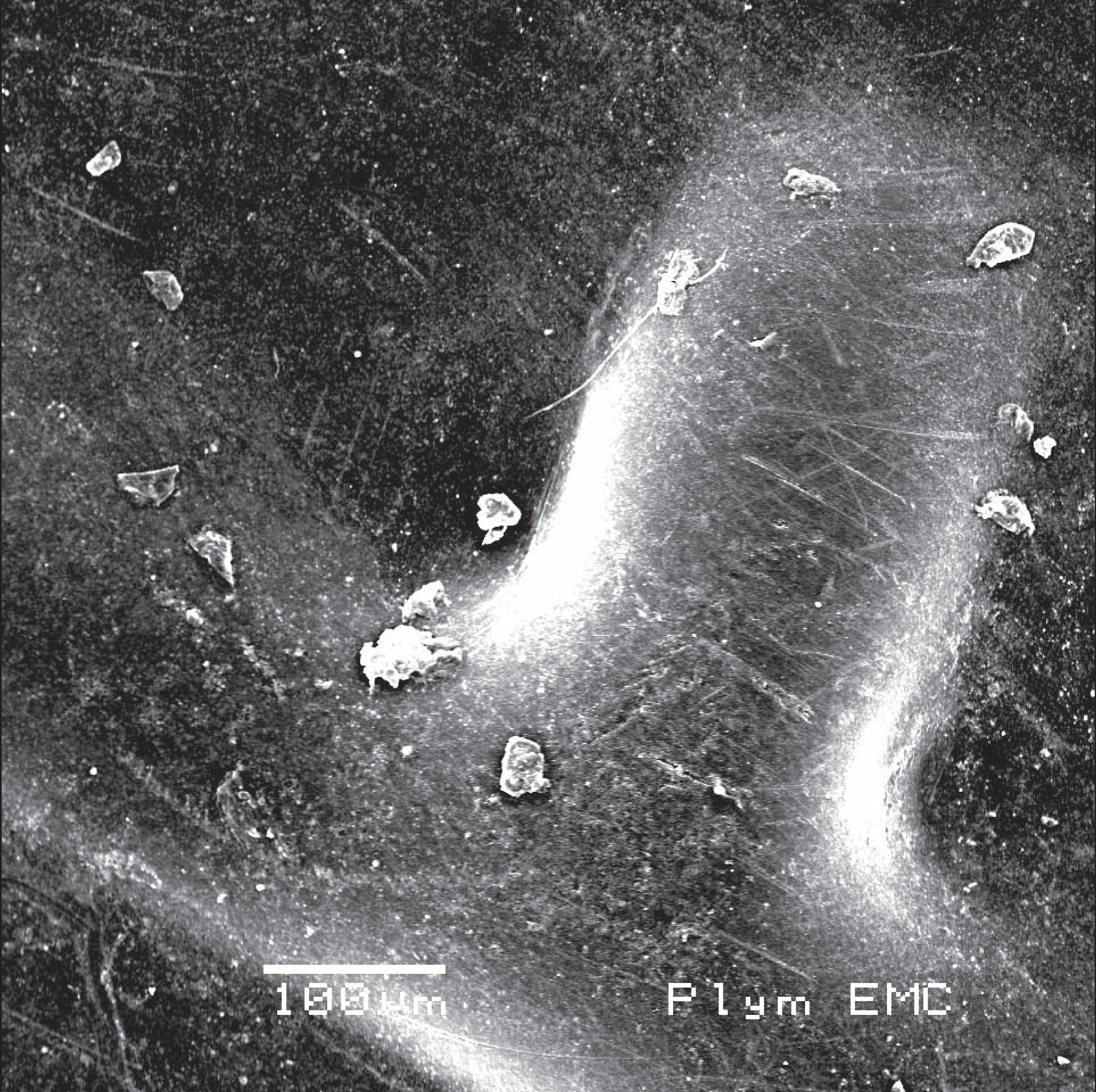
Arch-OS

Hard-disk

"1. Fill a hard-disk with Arch-OS data collected Portland Square building..."

2. Dismantle hard-disk...

3. Extract a fragment of hard-disk / Arch-OS data for microscopic exploration."



Out of Scale

Powers of Ten ⁹m

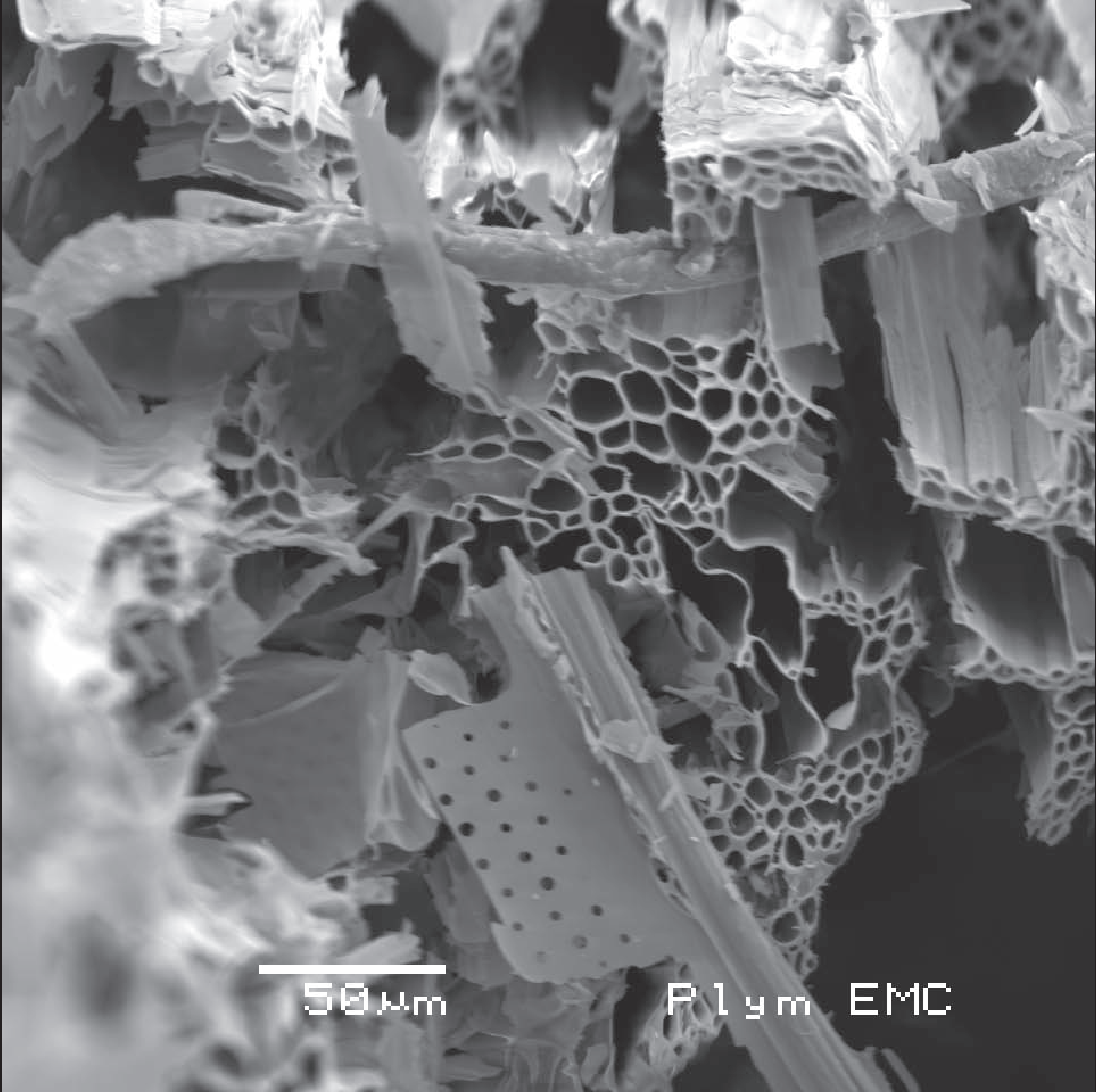


100µm

Plym EMC

Wayne Hemingway

Lego



50 μm

Plym EMC

Out of Scale

Powers of Ten ⁹m

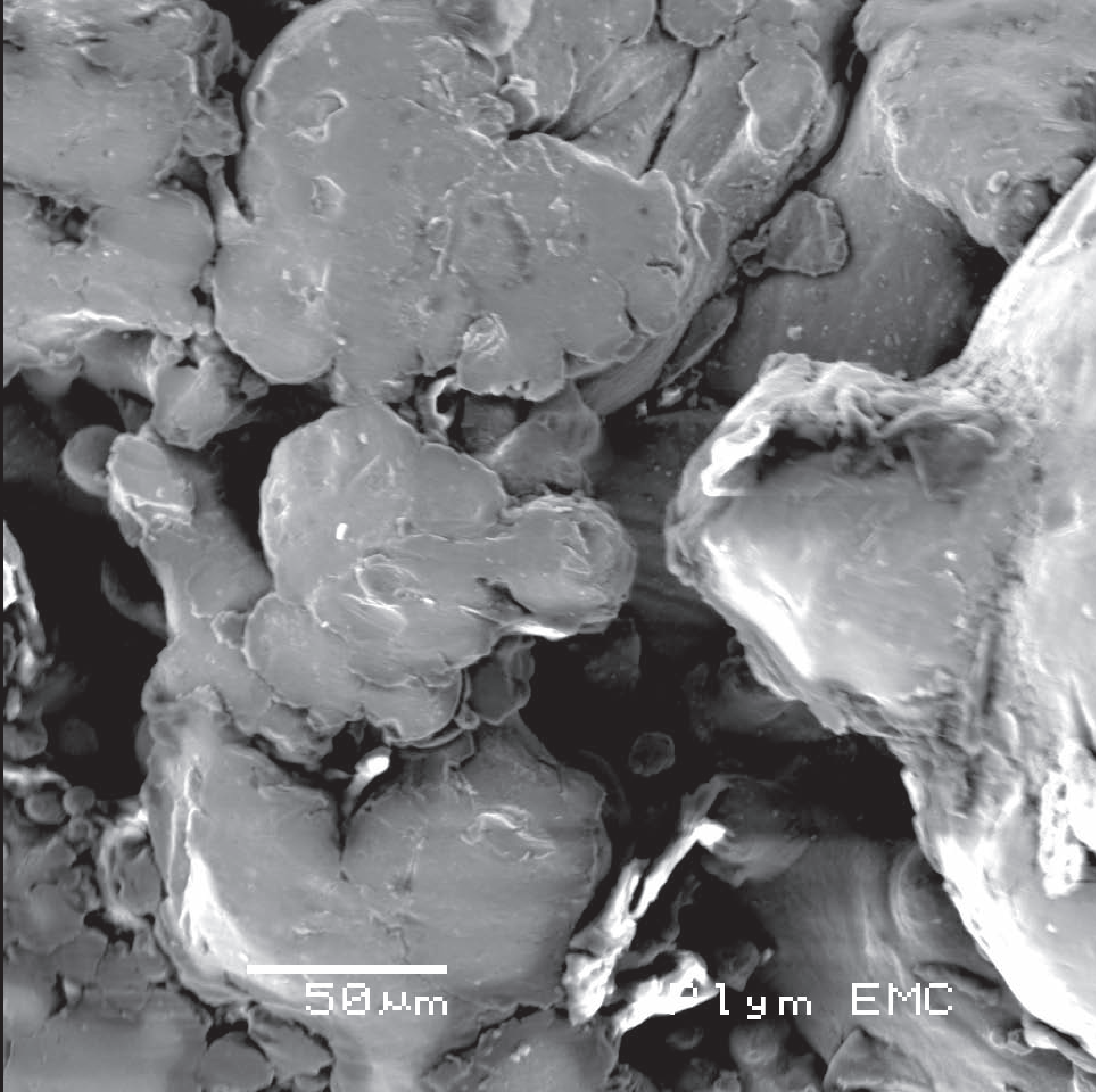
PLYMOUTH ARTS CENTRE

GHM Consultancy Group

Burnt match

"The micro view of architecture focuses on visible material form. Component materials of architecture are created through production processes, where energy is expended and waste produced.

Lighting a match is a small scale common action which releases energy and produces waste for a required use. Burnt material is complicit to architectural production, yet is not necessarily apparent in the finished work."



Out of Scale

Powers of Ten ⁹m

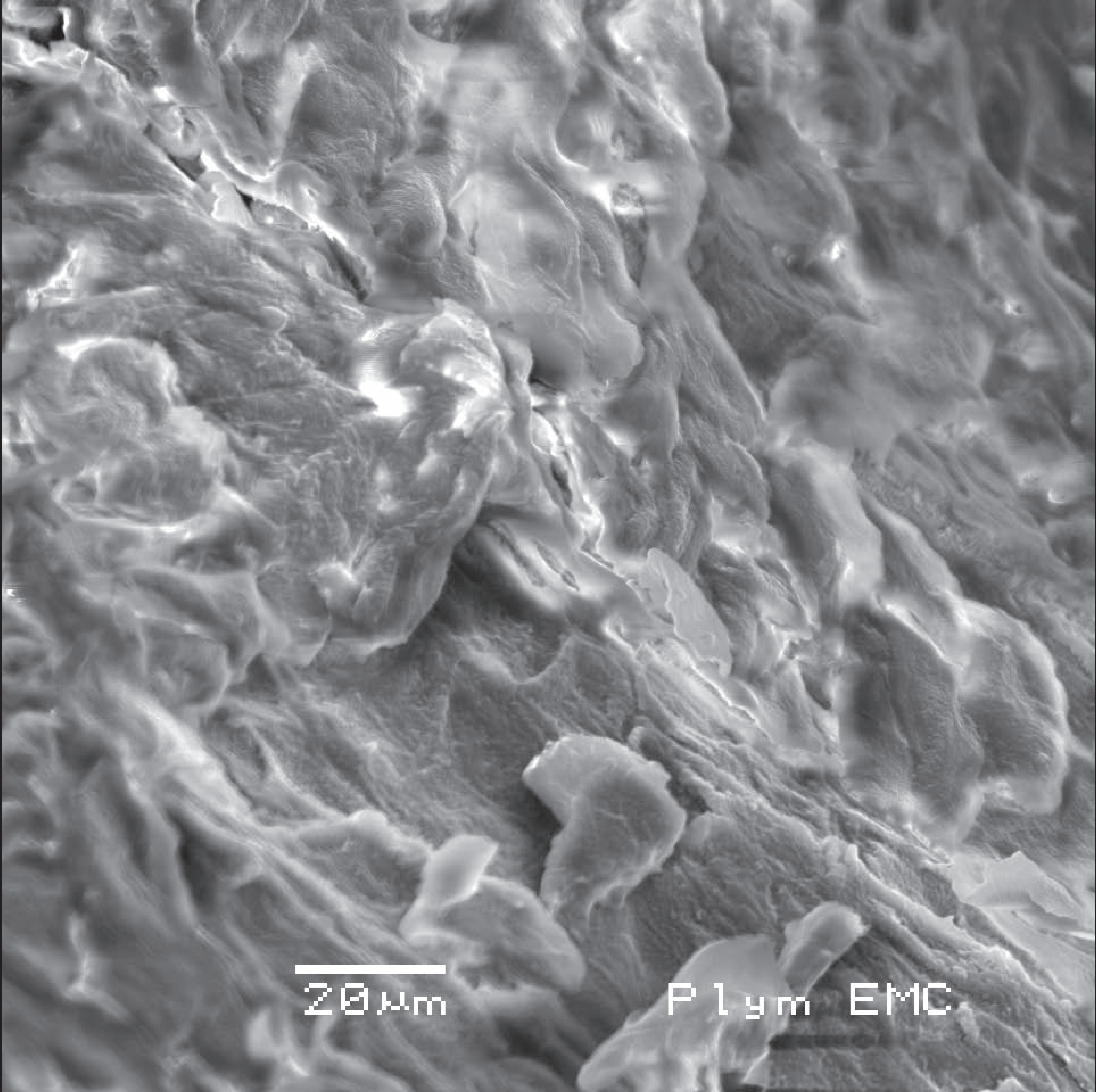


Ron Arad Associates

Laser Sintered Cobalt Chrome

"the smaller part is Cobalt Chrome, this is a development material that is not out on public release"

Sample provided by:
ESO Electro Optical Systems Ltd



Out of Scale

Powers of Ten ⁹m



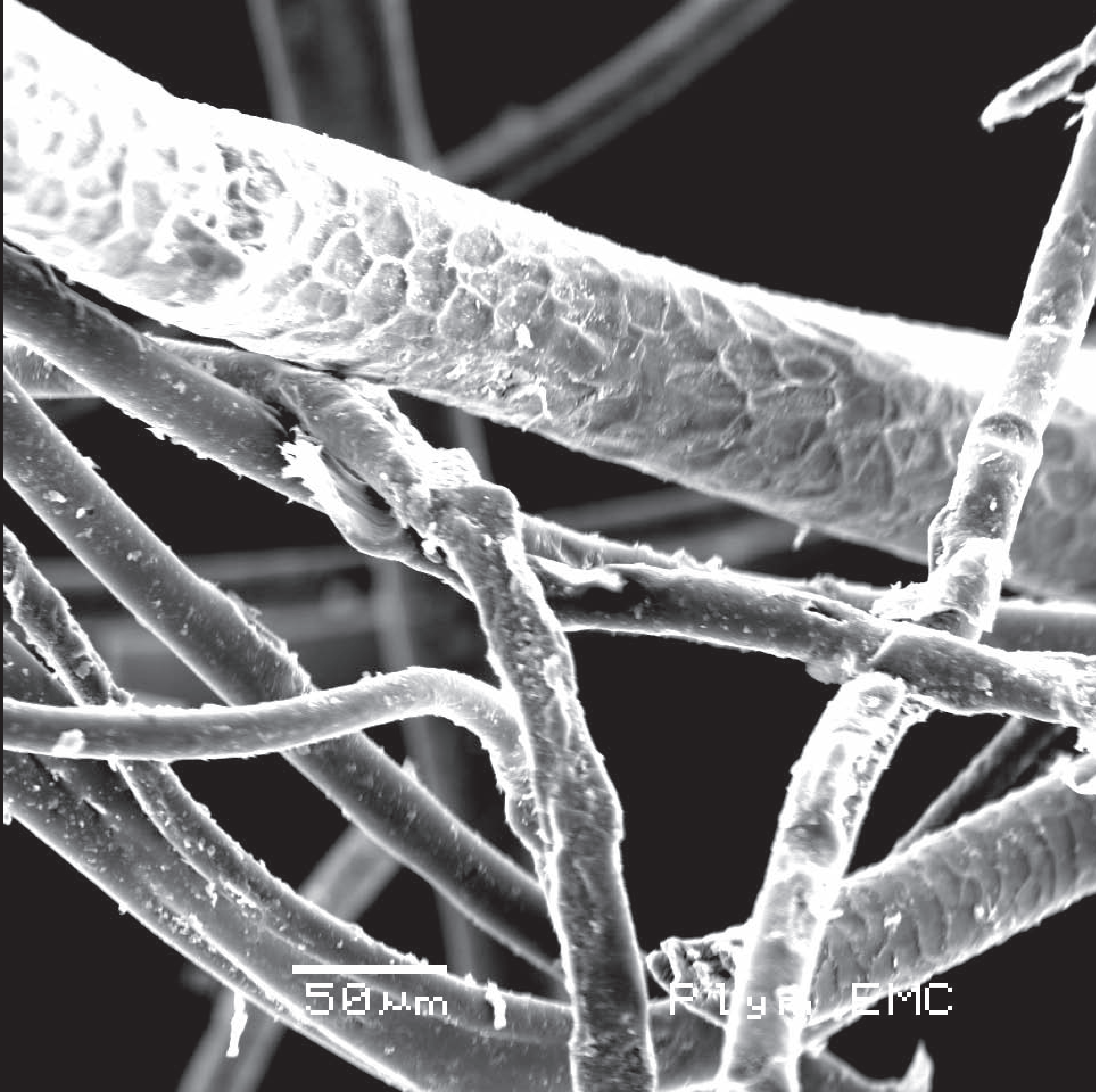
20 μ m

P l y m E M C

Richard Rogers Partnership

Welsh Slate

The Richard Rogers Partnership is using Welsh slate in its design of the National Assembly for Wales, situated on the water front of Cardiff Bay.



Out of Scale

Powers of Ten ⁹m



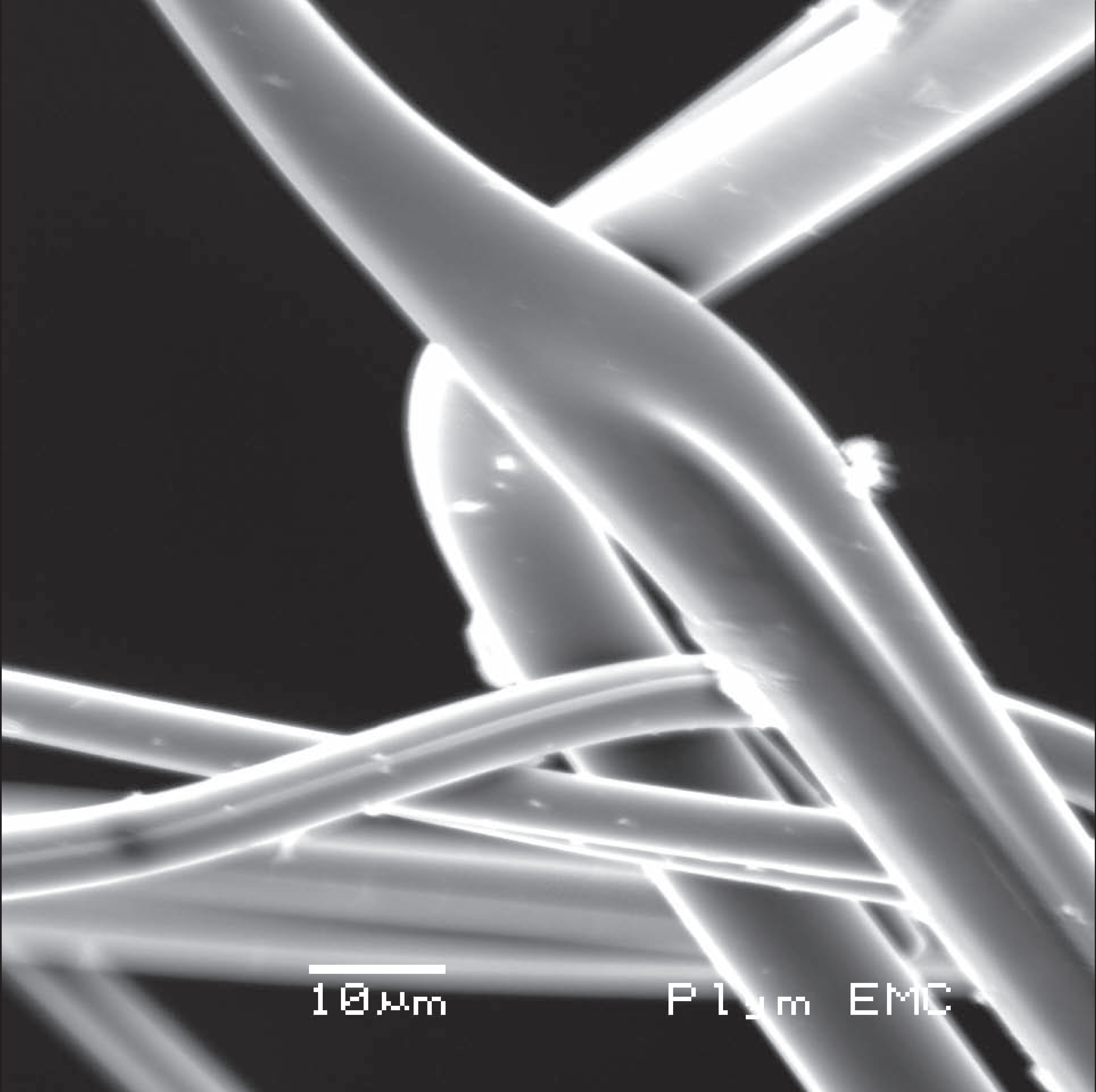
50 μm

Flynn EMC

Feilden Clegg Bradley

Sheeps Wool Building Insulation

"Please find enclosed a sample of sheeps wool building insulation and mineral wool insulation. We would like these photographs and compared with similar photographs of Glass wool insulation... We are interested in the difference in structure of these materials all of which reduce heat loss but are made from different materials and manufacturing techniques."



Out of Scale

Powers of Ten ⁹m



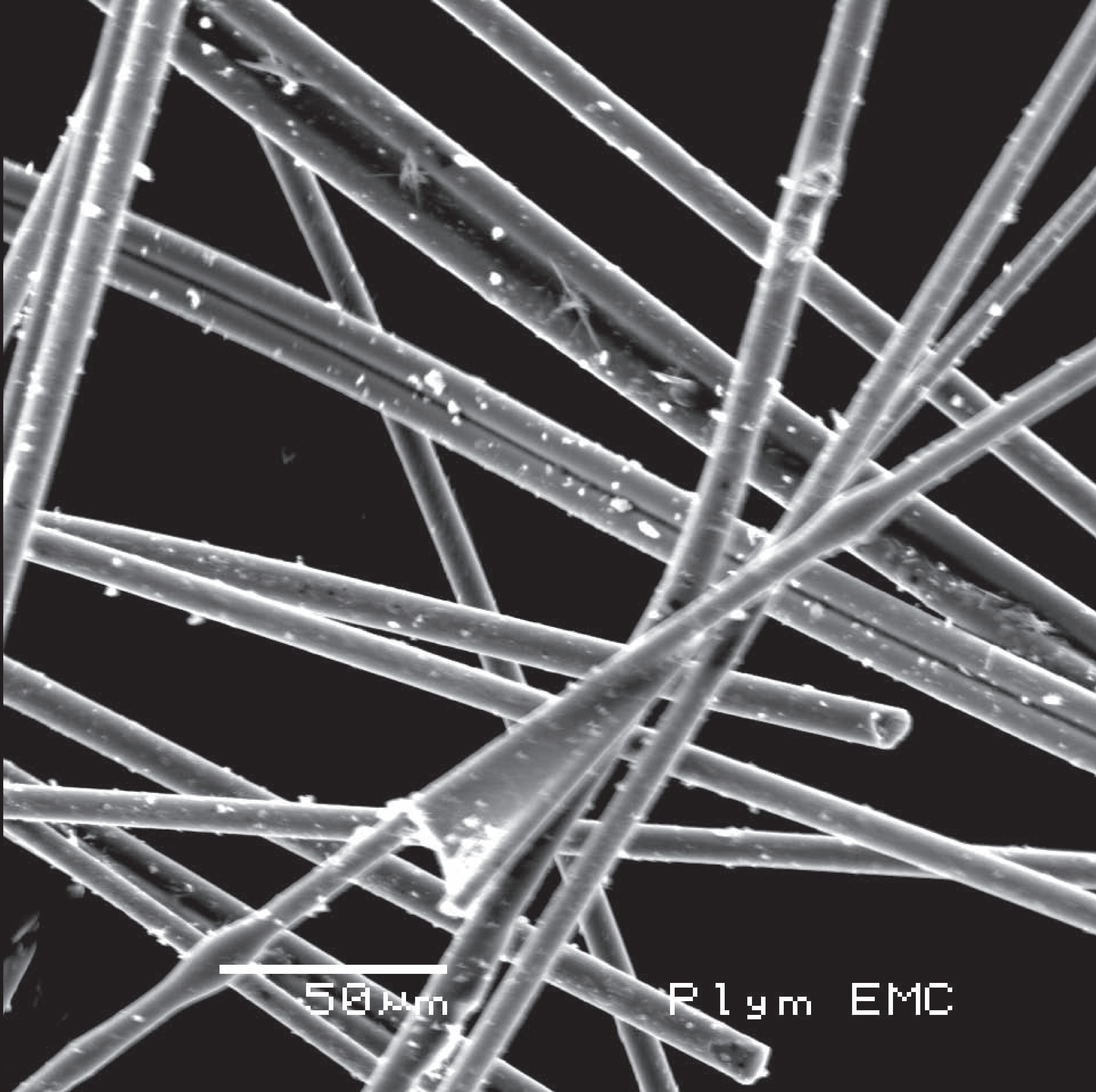
10 μ m

Plym EMC

Feilden Clegg Bradley

Mineral Wool Insulation

"Please find enclosed a sample of sheeps wool building insulation and mineral wool insulation. We would like these photographs and compared with similar photographs of Glass wool insulation... We are interested in the difference in structure of these materials all of which reduce heat loss but are made from different materials and manufacturing techniques."



Out of Scale

Powers of Ten 

50 μm

Plym EMC

Feilden Clegg Bradley

Glass Fibre Insulation

"Please find enclosed a sample of sheeps wool building insulation and mineral wool insulation. We would like these photographs and compared with similar photographs of Glass wool insulation... We are interested in the difference in structure of these materials all of which reduce heat loss but are made from different materials and manufacturing techniques."

Out of Scale

Powers of Ten ⁹m



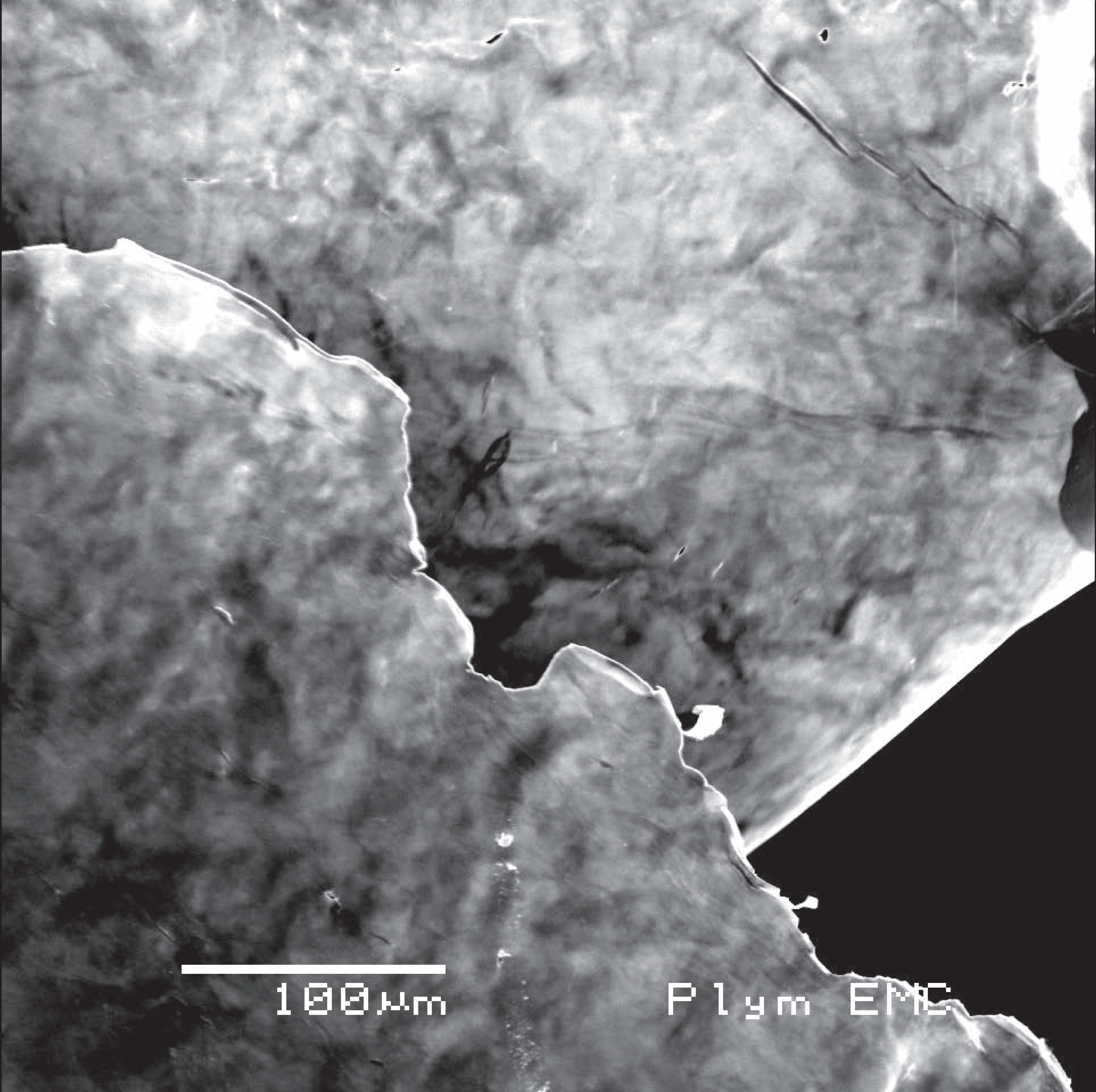
20 μ m

P l y m E M C

dRMM

NanoGel

"Please find enclosed a sample of 'Nanogel' (an aerogel used in insulation)... Hopefully it will be possible to capture some images revealing the 'nanoscopic' scale of the structure... Apologies for the non-sterile conditions!"



Out of Scale

Powers of Ten ⁹m

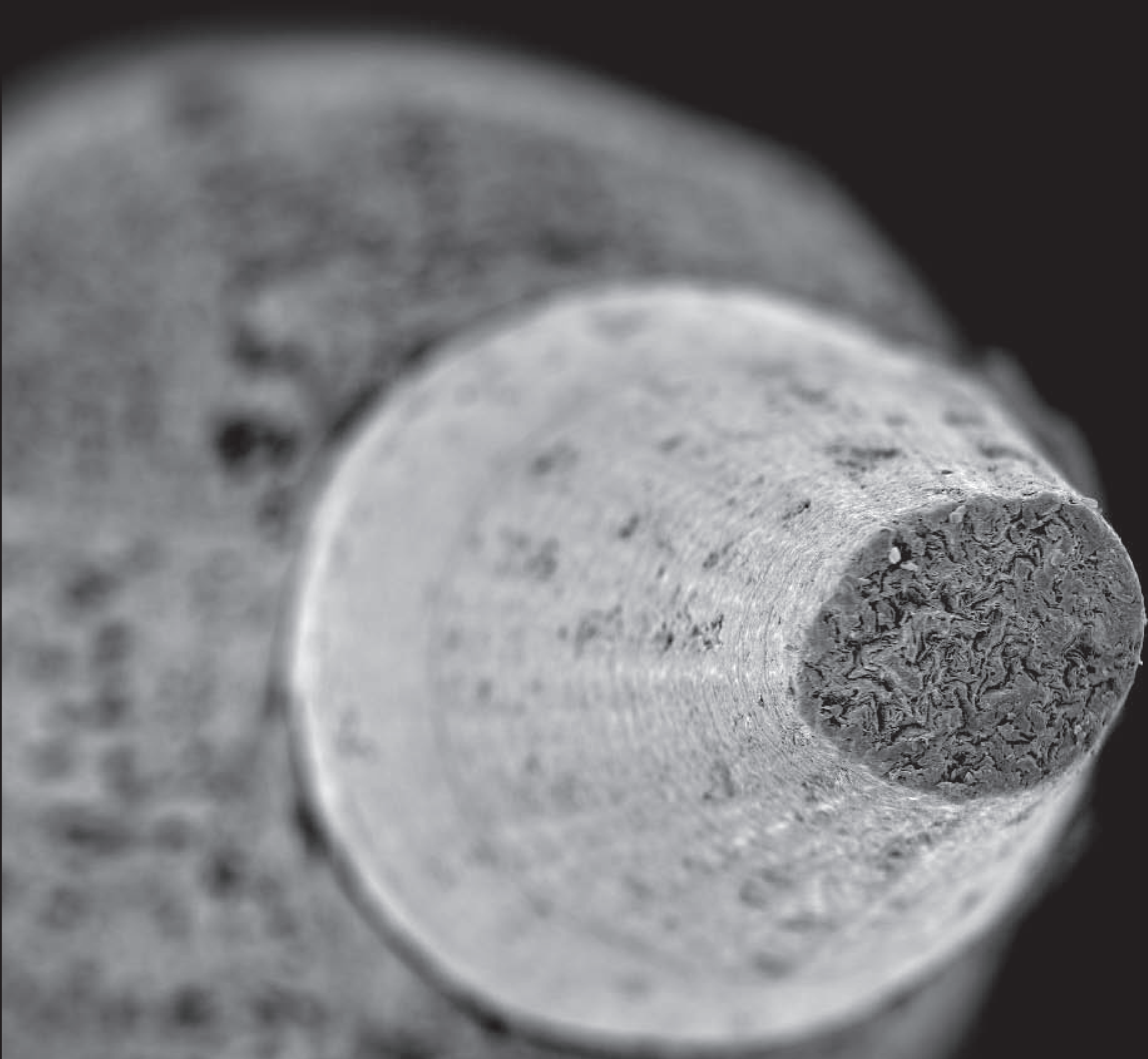


100µm

Plym EMC

Caruso & St John Architects

Gold leaf



500 μm

P l y m E M C

Out of Scale

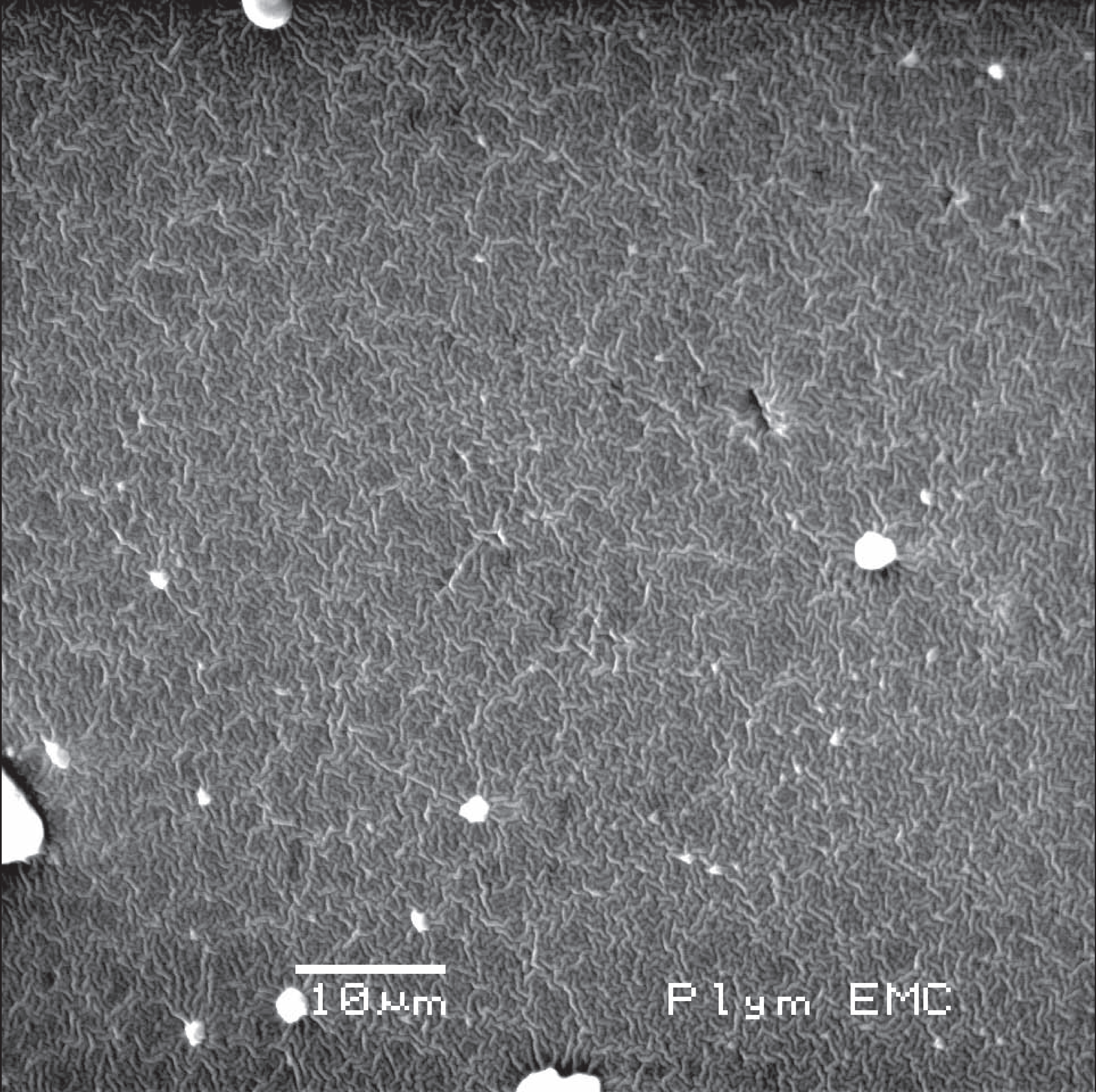
Powers of Ten ⁹m



Sana Murrani

HB Pencil

"A tip of a pencil... Carbon and wood...
Living Potentials."



Out of Scale

Powers of Ten ⁹m



10 μ m

P l y m E M C

Rick Mather Architects

Mastik

"Please find enclosed one of our most valuable mastic seal samples, I'll be interested to see the results!"



Out of Scale

Powers of Ten 

 PLYMOUTH ARTS CENTRE 

X100 100µm

Plym EMC

Henning Larsens Tegnestue

Cotton

"the weave of cotton references streets and flow."