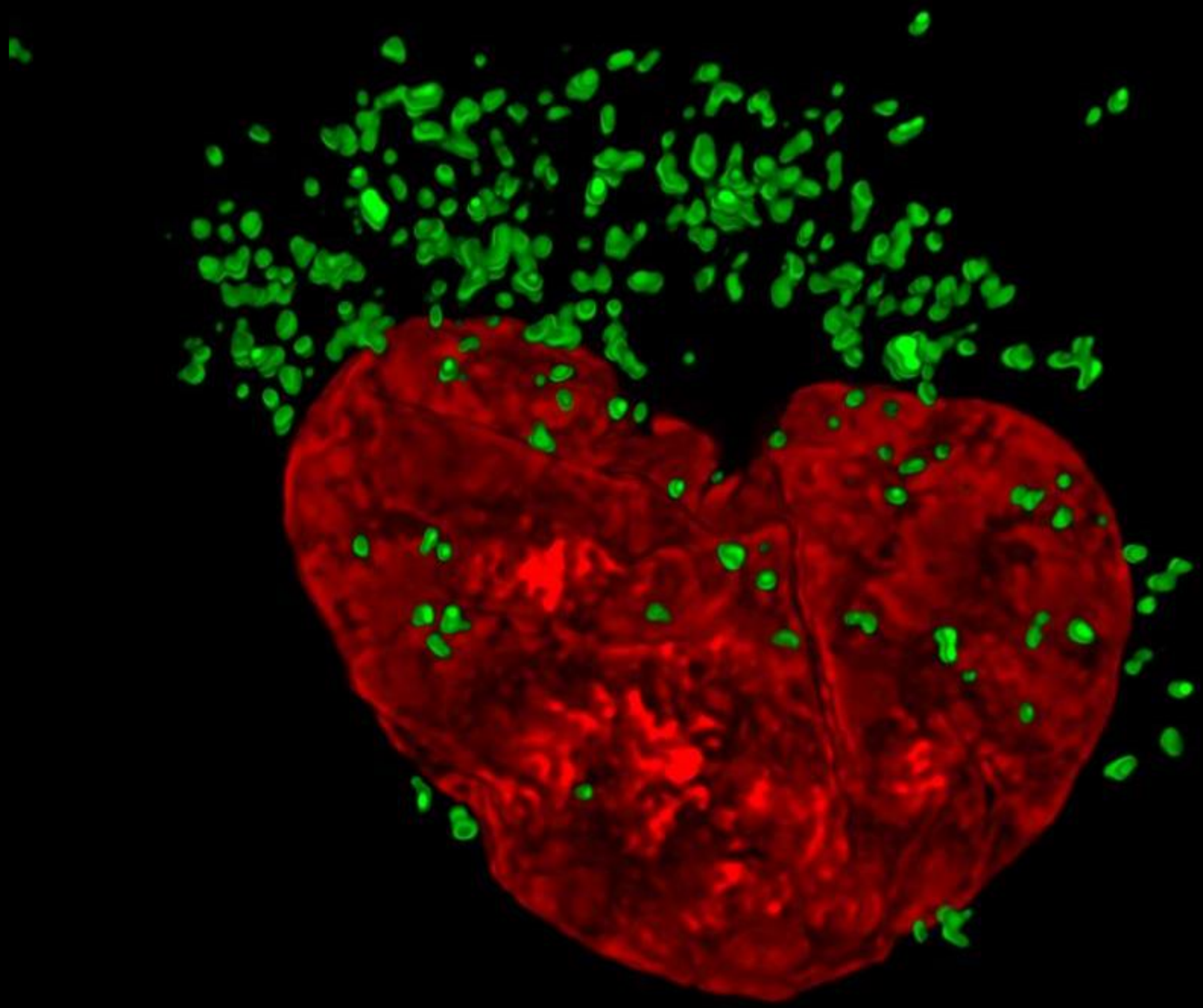


Annarita Stringaro,
Giuseppina Bozzuto

Italian National Institute of Health, Italy

“When the Heart Breaks: Mitochondria in Collapse”

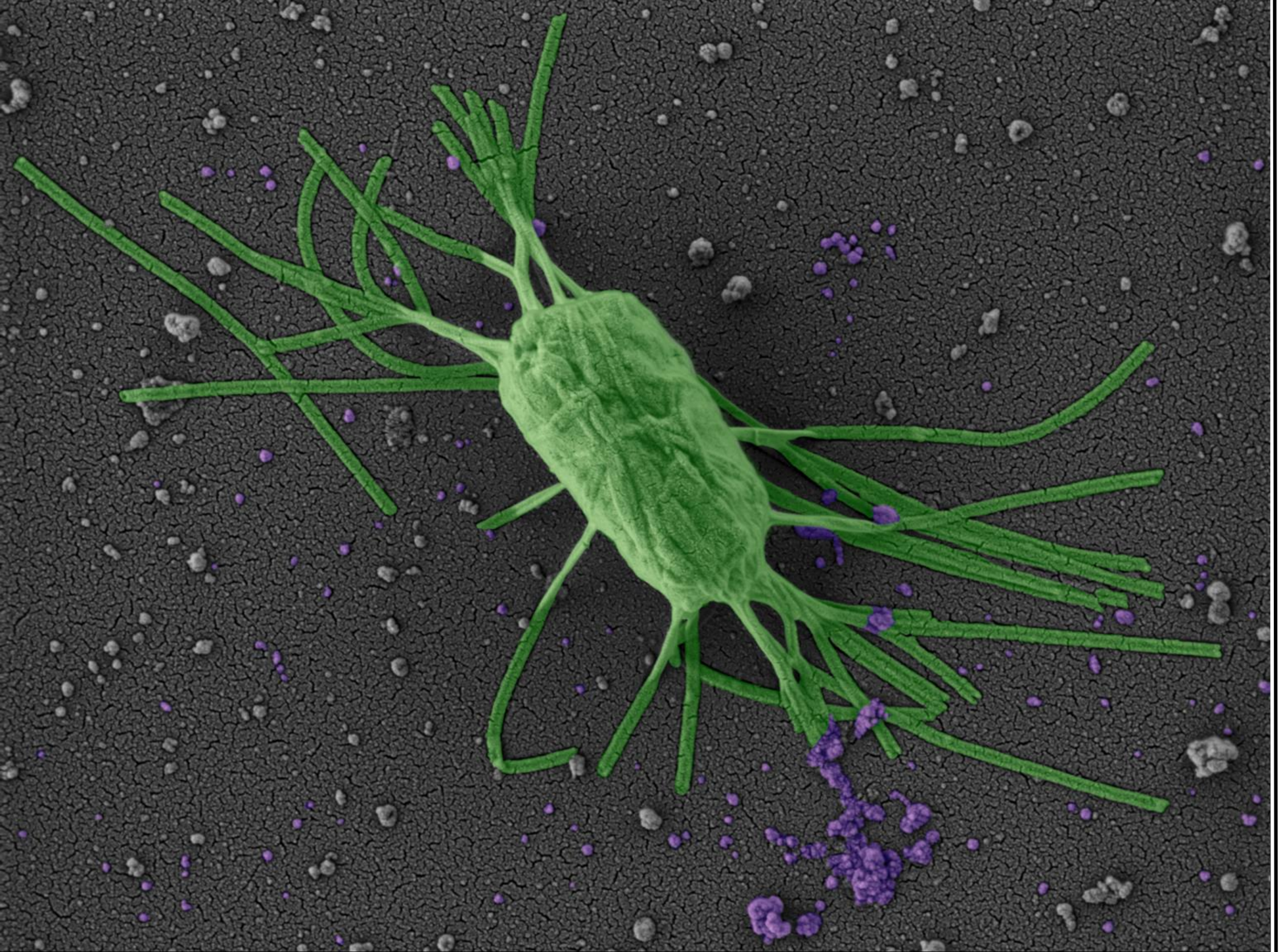
Confocal image acquired with Stellaris Plus microscope showing a glioblastoma cell treated with a copper complex. The treatment induces evident alterations in nuclear morphology (red) and mitochondrial structure (green), leading to rounding and perinuclear clustering of mitochondria. Scale bar: 10 µm.

Nina Križaj Kosi

Jožef Stefan Institute, Slovenia

“The Creation of Adam”

From divine spark to atomic precision — a modern 'Creation of Adam' visualised by transmission electron microscope. Where art meets science at the nanoscale.

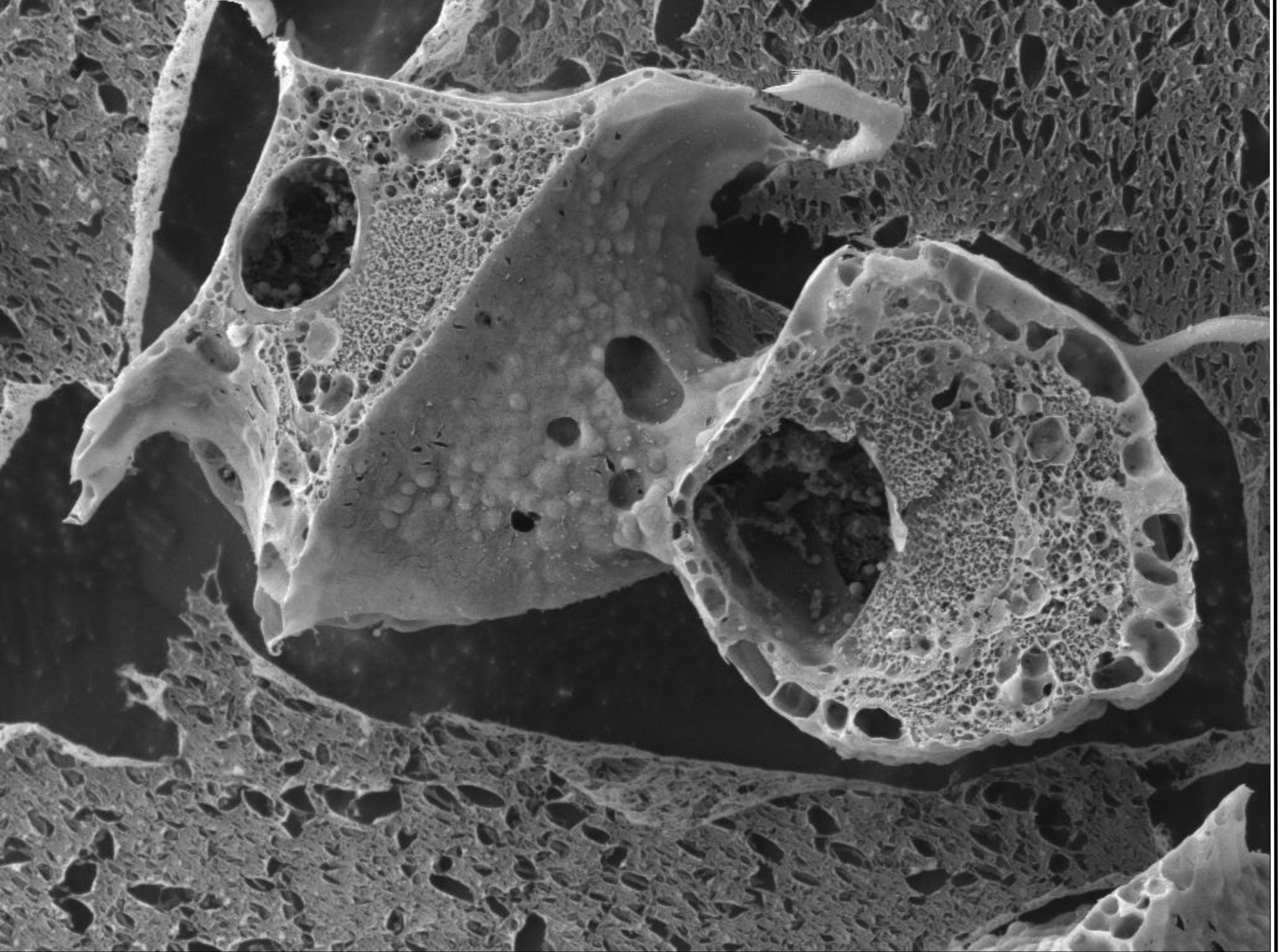


Kerstin HINGERL

Medical University Graz, Austria

“The Hidden World - Escherichia coli with Fimbriae – SEM Visualization”

Digitally colorized SEM image of a single *Escherichia coli* bacterium from a stool sample. The rod-shaped cell measures about 1–2 micrometers in length and 0.5 micrometers in diameter. Hair-like fimbriae or pili are visible on the surface, used for attachment to surfaces or other cells.

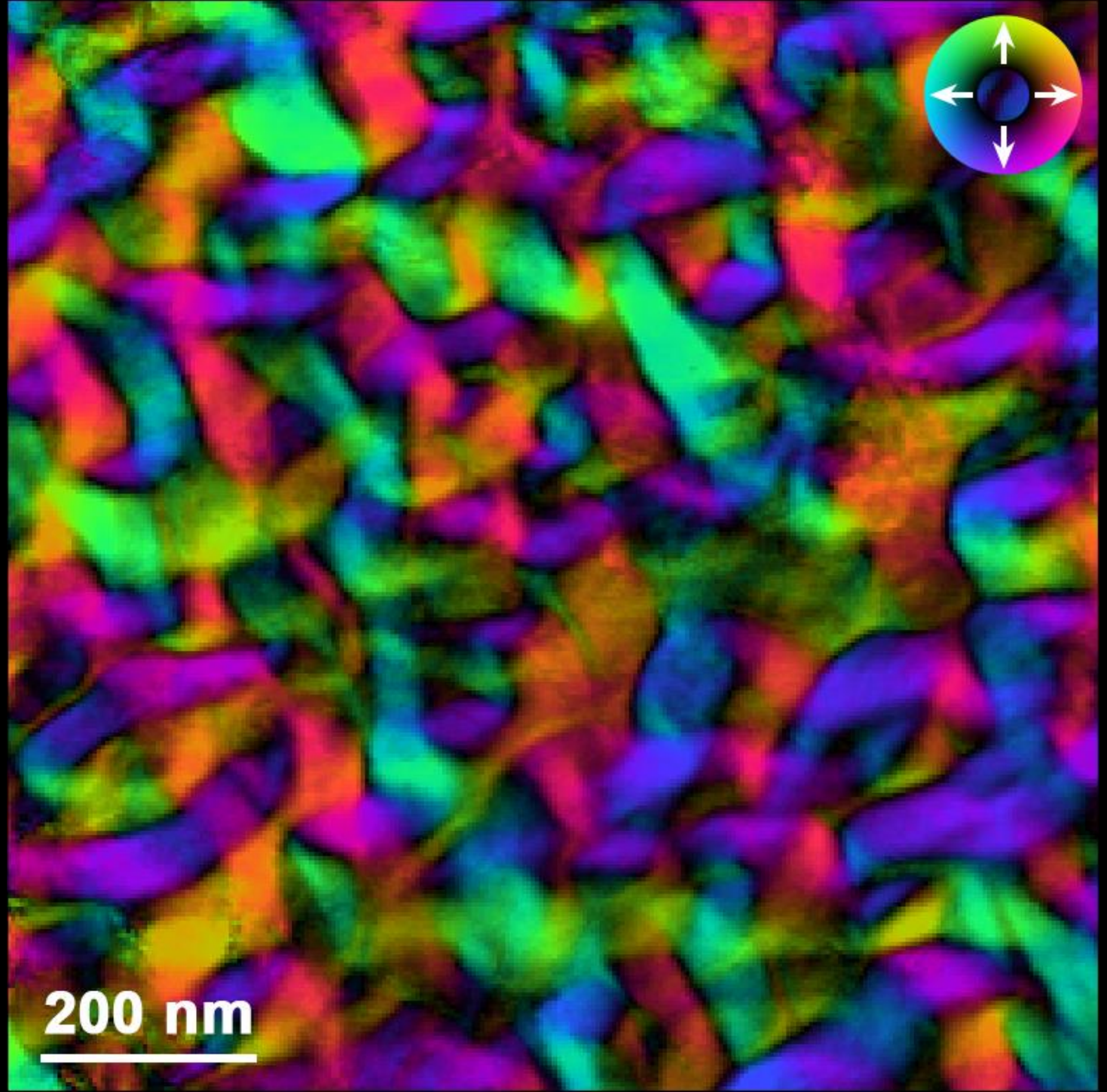


Dominique Pernitsch

Medical University Graz, Austria

“Looking inside freeze-fractured Human Chordoma Cells”

This scanning electron micrograph depicts two human chordoma cells that were cryo-frozen and freeze-fractured by a Quorum PP3010T Cryo-SEM Preparation System. The cells were captured using a ZEISS Sigma 500 microscope to which the preparation system is mounted.

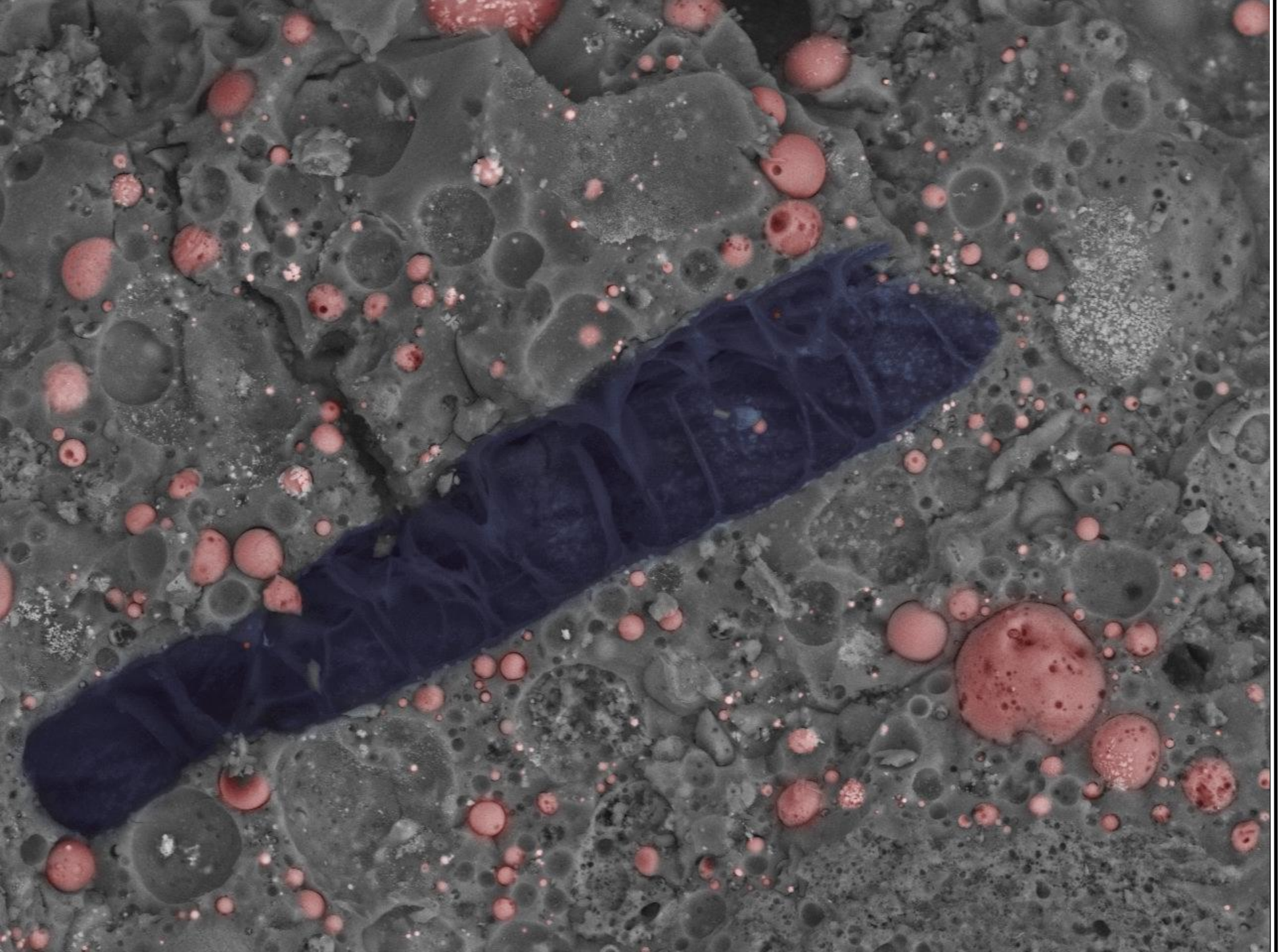


Trevor Almeida, Emily Wackan, Joshua Einsle, Stephen McVitie

University of Glasgow, United Kingdom

“Interwoven Magnetic Meteorite Quilt”

The magnetic domain configuration within an extremely magnetic tetrataenite (nickel-iron alloy) region found in an Odessa meteorite sample. The image was acquired using the scanning Lorentz TEM method of differential phase contrast imaging with a Medipix3 pixelated detector. The beam deflections are combined and the colour indicates magnetic field directions.



Barbara Horvat

Milan Vidmar Electric Power Research Institute, Slovenia

“Where canine “fit-for-function” meets chemistry: A hair-matrix bond beyond expectation”

Vertically split winter coat hair from a Nova Scotia Duck Tolling Retriever embedded in alkali-activated fly ash matrix. The LV-SEM micrograph, magnified 500x, reveals the rarely studied fibre’s internal hollow architecture: exposed not through sample preparation, but destructive mechanical testing, revealing unexpectedly strong bond between the fibre and the matrix.

Rok Kostanjšek

University of Ljubljana, Biotechnical Faculty, Slovenia

“Where is my ball?”

FESEM micrograph of spherical honeycomb nanoparticle (brochosome) of biological origin on the thorny cuticle of the leafhopper enabling extreme hydrophobic properties of the outer surface of these insects.

Rok Kostanjšek

University of Ljubljana, Biotechnical Faculty, Slovenia

“Cuticular flower”

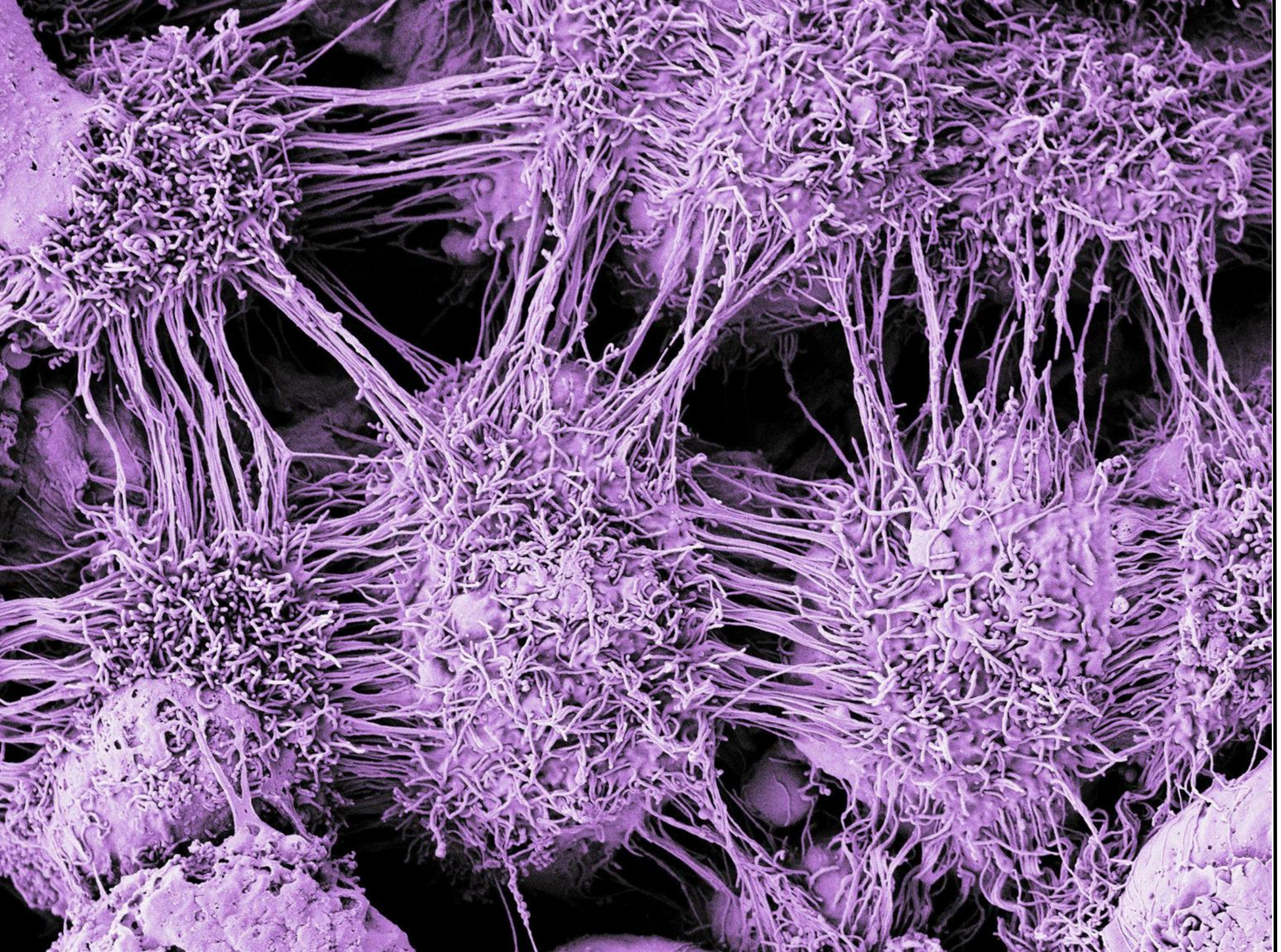
FESEM micrograph of a flower-shaped sensilae on the surface of terrestrial isopod crustacean *Atlantoscia floridana*

Paola Parlanti

Istituto Italiano di Tecnologia, Italy

“Escher-like FIB-SEM's self-portrait”

While imaging a non-conductive polymeric sample with a Helios 600 FIB-SEM, strong charging artifacts occurred, leading to a distorted image of the microscope’s chamber. All the FIB-SEM components embedded into the chamber are visible: sources, detectors, GISs, manipulator. Silver paste over some areas of the specimen reduces charging effects at the sample’s periphery.

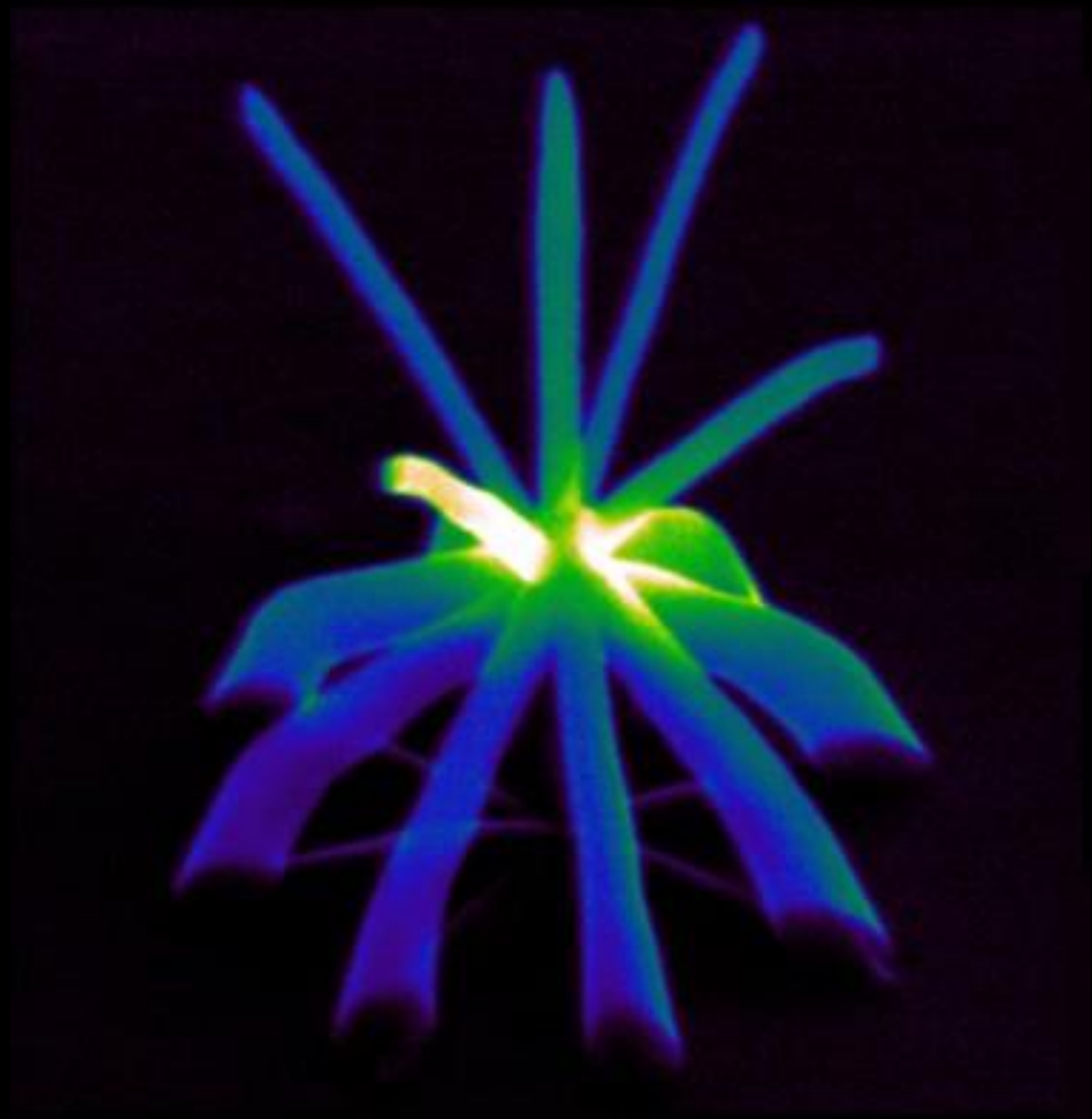


Rok Kostanjšek

University of Ljubljana, Biotechnical Faculty, Slovenia

“Few cells - many connections”

FESEM micrograph of loosely-connected cells on the surface of the gills of the European blind cave salamander (*Proteus anguinus*)

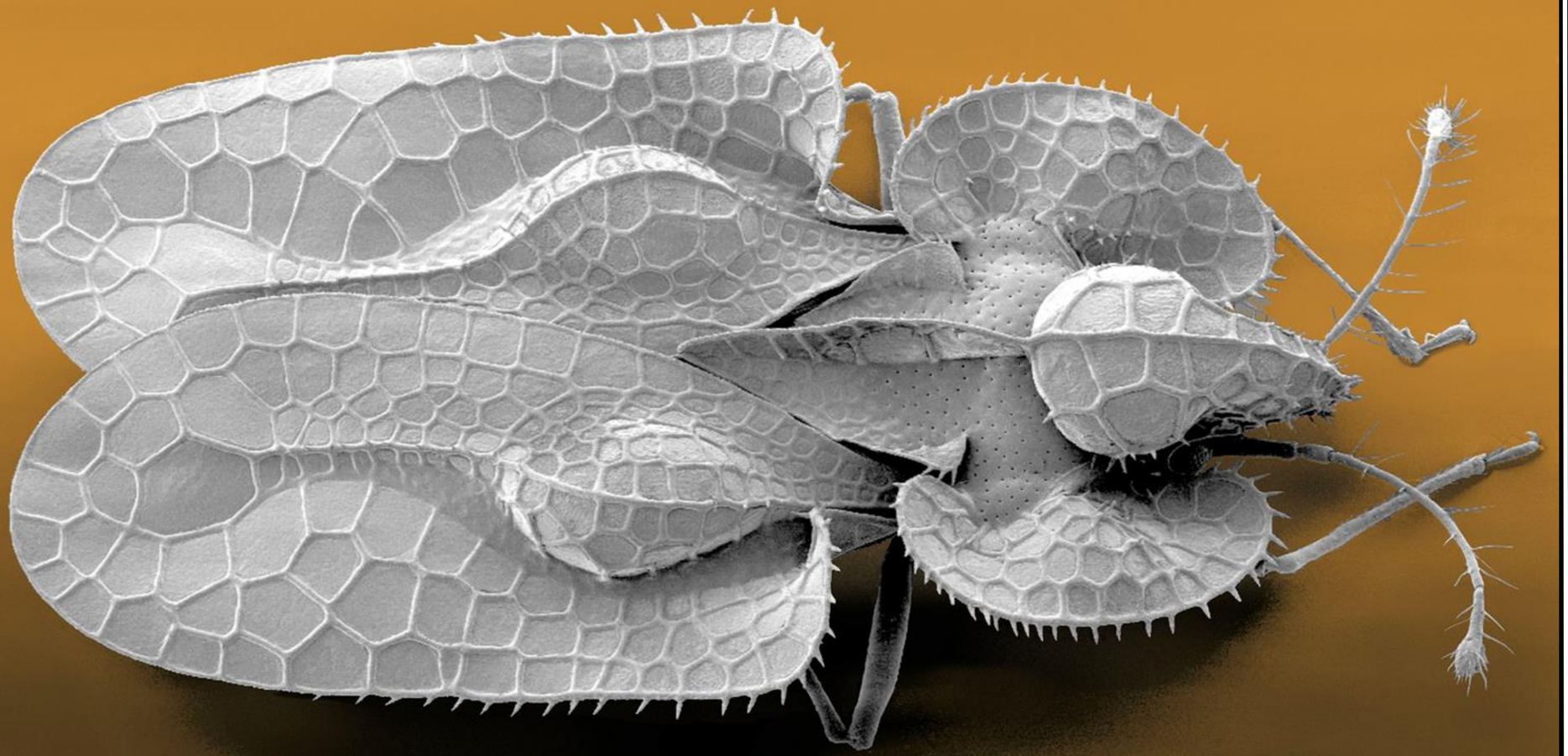


Sameh Okasha

University of Glasgow, United Kingdom

“3D Printed Nano-Flower”

3D nano-printed, flower-like structure, fabricated using the Helios PFIB via Fe-FEBID, highlight the remarkable precision achievable with modern nanofabrication techniques. This structure is presented to spark curiosity and inspire the imagination on the future possibilities of 3D nano-printing in technological innovation.

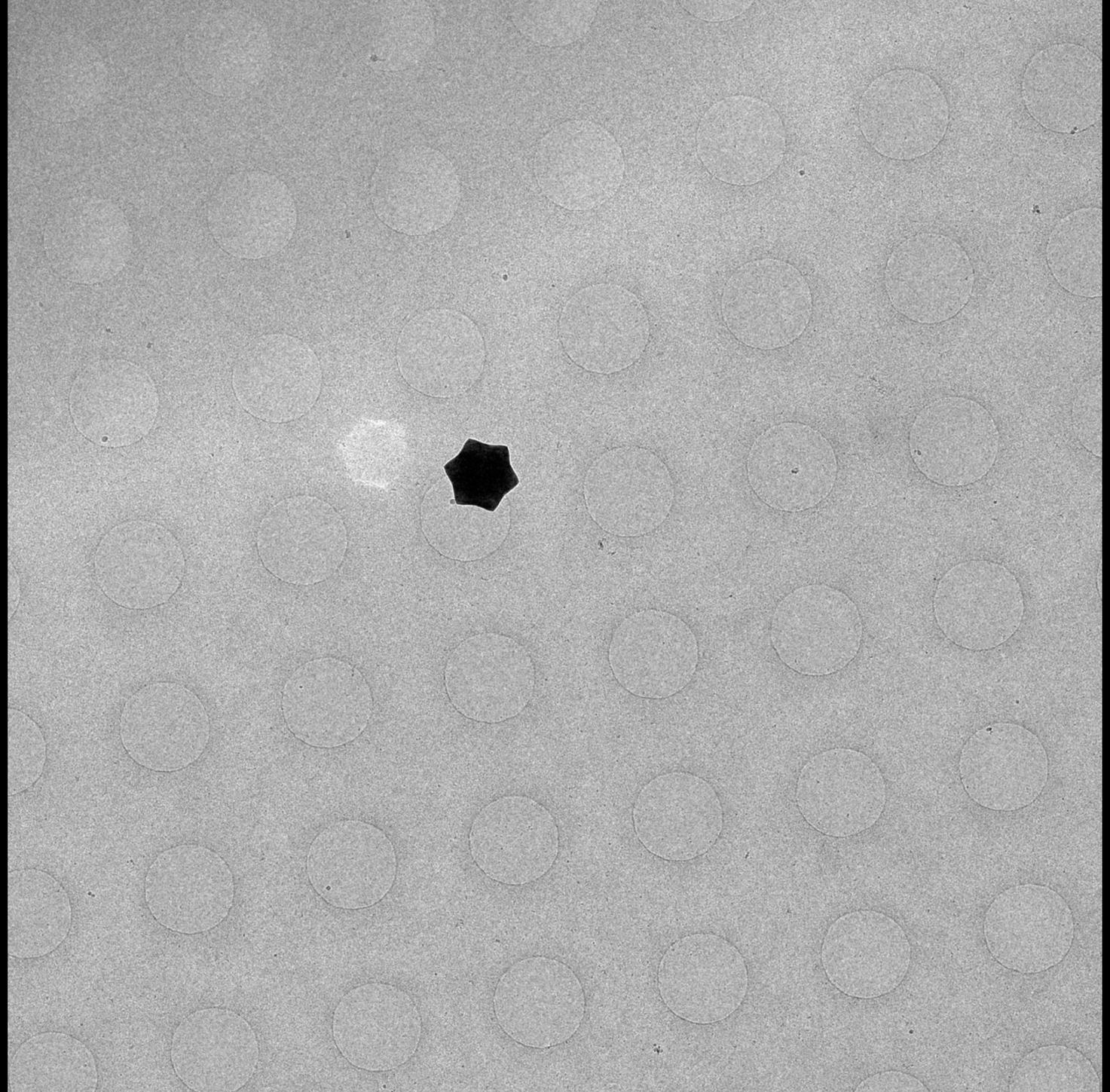


Rok Kostanjšek

University of Ljubljana, Biotechnical Faculty, Slovenia

“Lacy pest”

FESEM micrograph of the oak lace bug (*Corythucha arcuata*), an invasive pest causing a significant damage to oak trees across Europe in recent years.

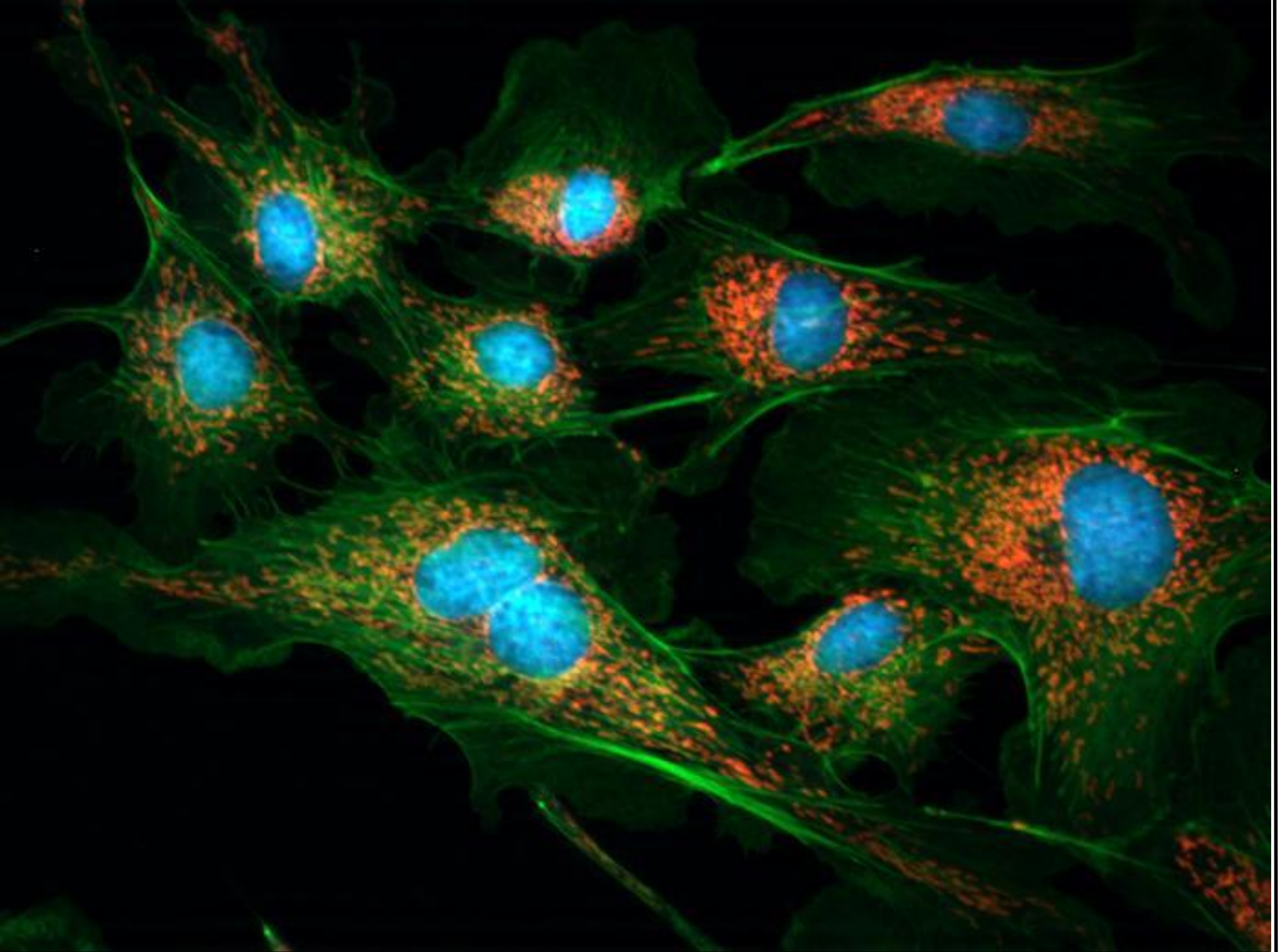


Matic Kisovec

National Institute of Chemistry, Slovenia

“Dark Star Diffraction”

On the surface of a holey carbon EM grid we can see a star-shaped ice crystal and next to it a bright star-shaped area where the diffracted electrons landed.

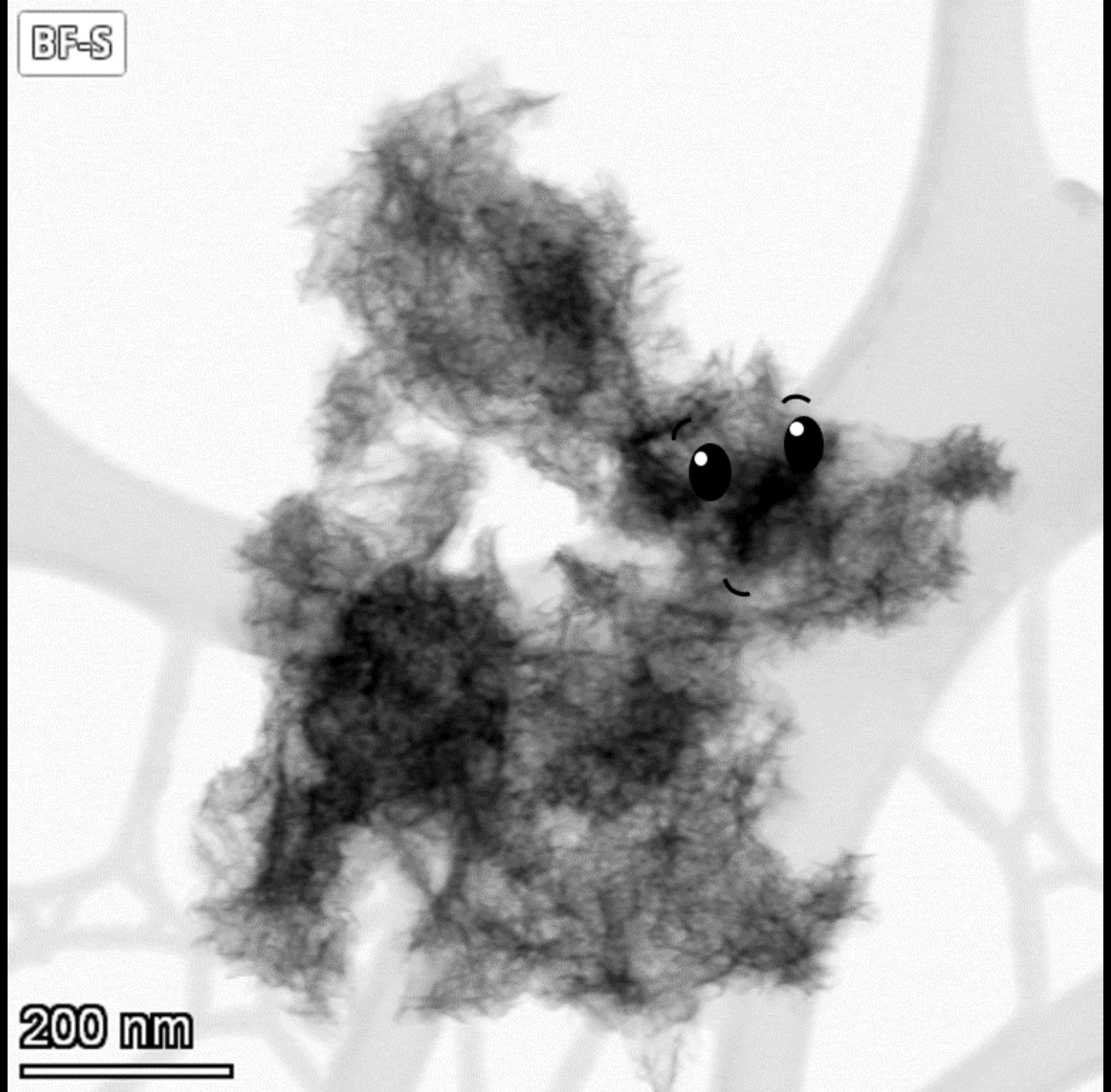


Rok Kostanjšek

University of Ljubljana, Biotechnical Faculty, Slovenia

“Colorful yet dangerous”

Confocal micrograph of cancer cells showing nuclei in cyan (DAPI staining), cytoskeletal elements in green (anti-tubulin antibody marker) and mitochondria in red (anti-mitochondrial antibody marker)



Nina Križaj Kosi

Jožef Stefan Institute, Slovenia

“NanoPup”

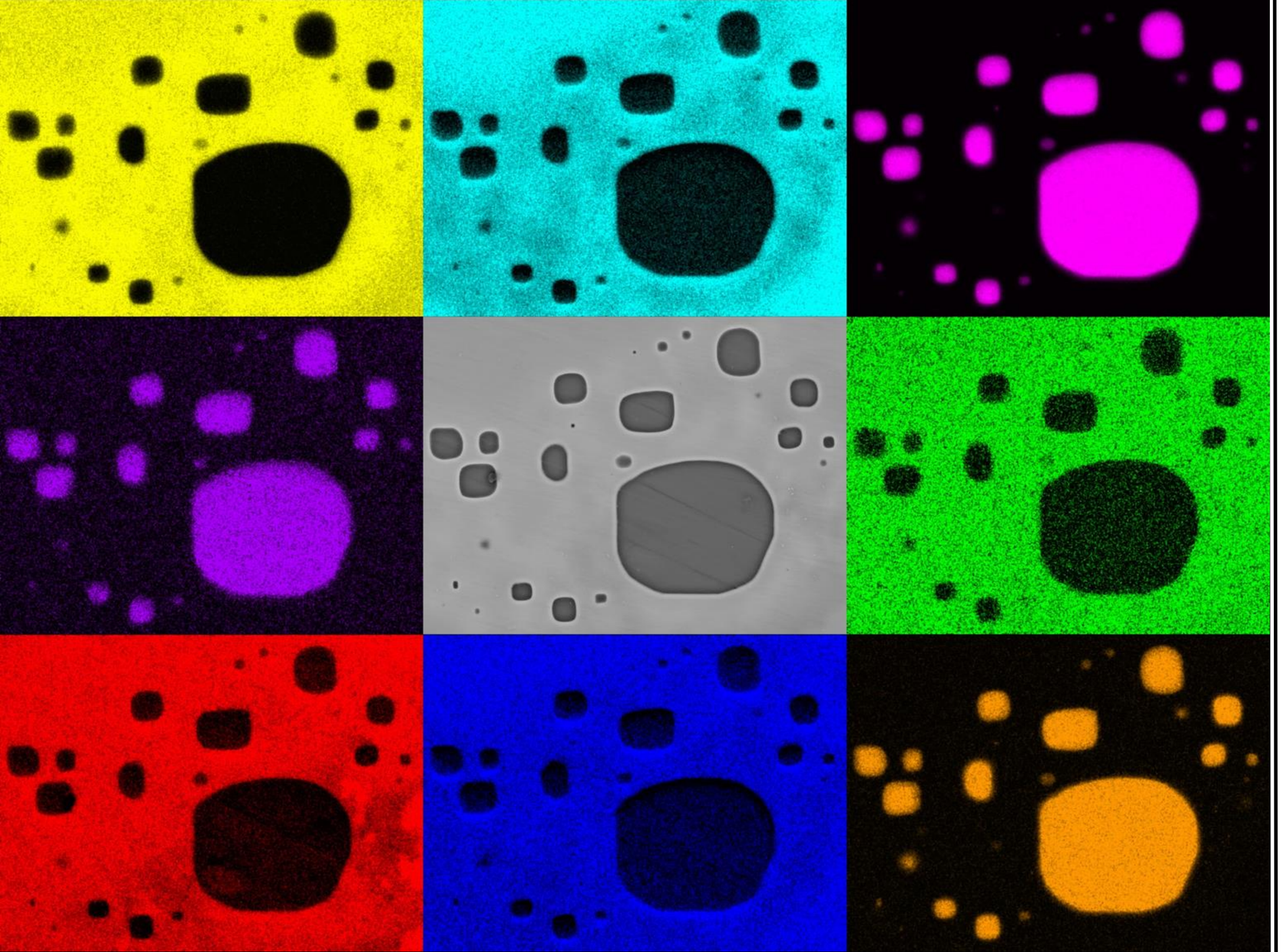
NanoPup: Man’s smallest best friend.

Jaleh Barzideh

Shiraz University of Medical Sciences, Shiraz, Iran

“Unmasking a human sperm”

The current document has investigated the components of human sperm. Various stages of Giemsa staining were utilized, and the gathered files from cytogenetic PC microscopy underwent computational mathematical processes. After thorough linear and nonlinear filtering and file expansion reiteration, the specifics of the human sperm head were revealed.

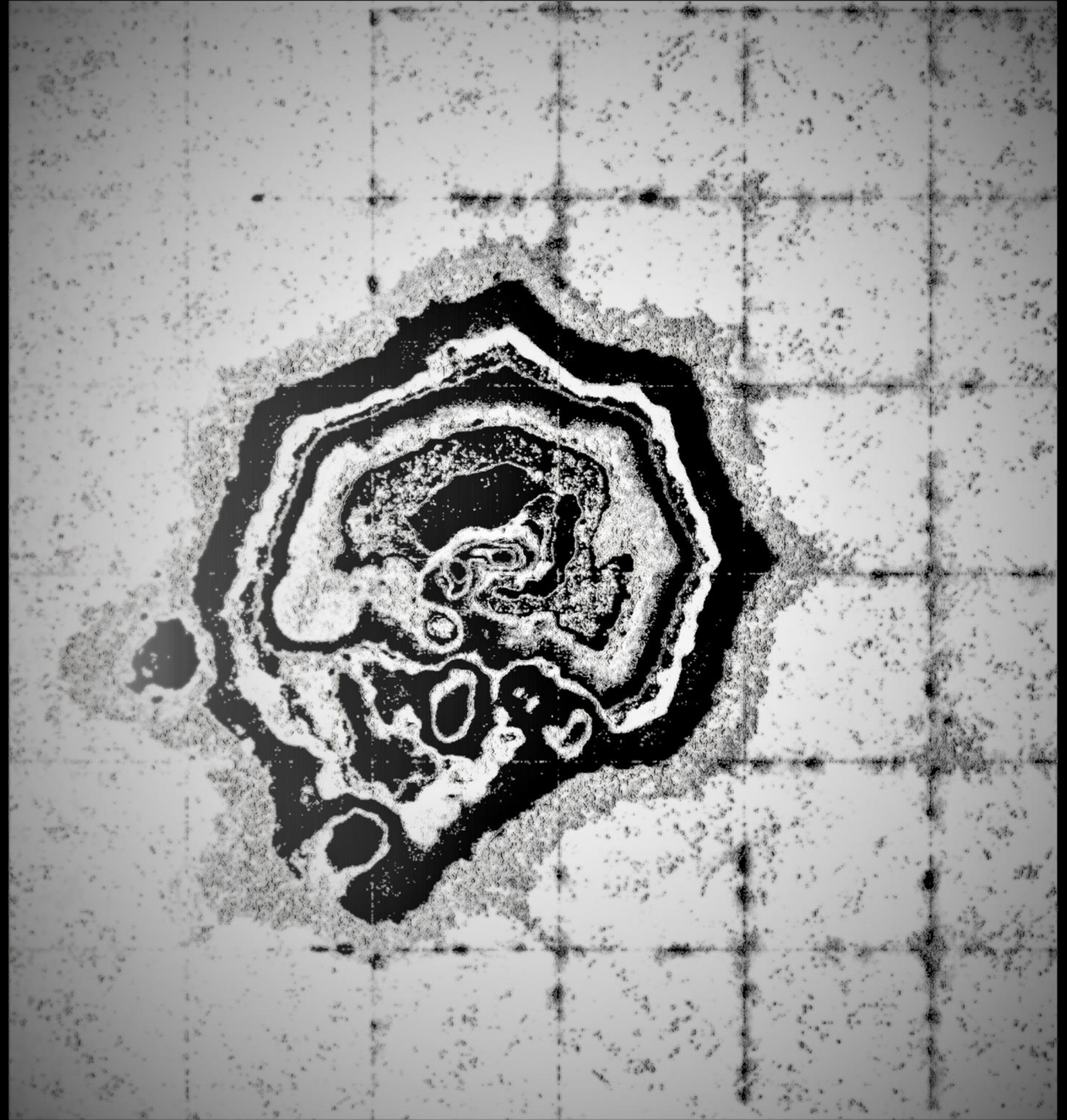


Davide Porrelli, Davide Lenaz

University of Trieste, Italy

“Mineralogical De Stijl - Geometric Abstractions”

EDS map of plagioclases (albite, $NaAlSi_3O_8$; anorthite, CaAl2Si2O8) in a Slovenian Cretaceous flysch-chromite [(Mg,Fe2+)(Cr,Al)2O4)]. The crystal was probably emplaced in the Dinarides chain during the Jurassic and moved by atmospheric agents and orogenic movements. Cr-yellow; Al-cyan; Si-magenta; Na-violet; SEM image-grey; Fe-green; O-red; Mg-blue; Ca-orange. Images width is 60 µm.

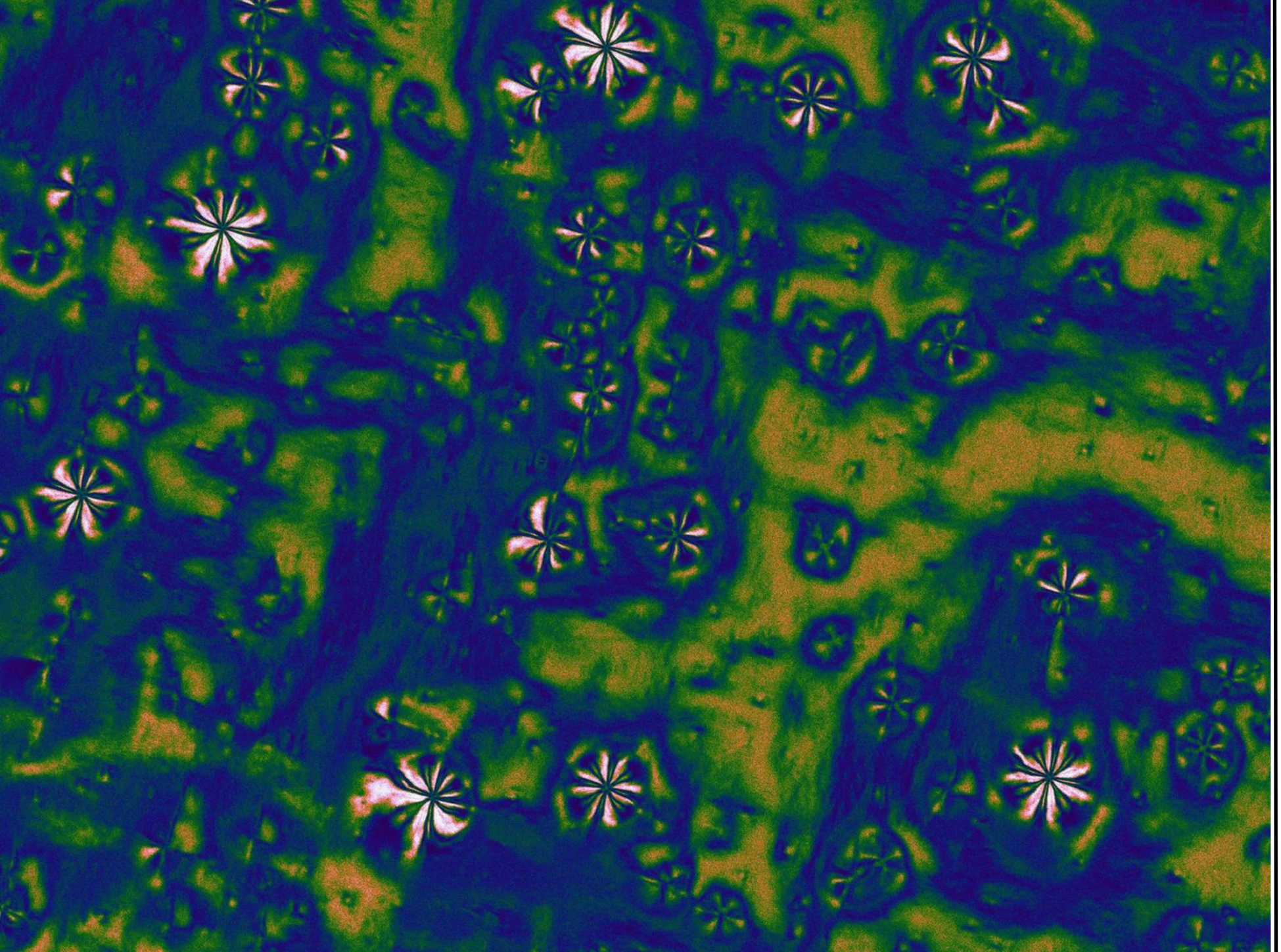


Jaleh Barzideh

Shiraz University of Medical Sciences, Shiraz, Iran

“The human sperm brain”

A slide stained by giemsa and captured the file by PCM. The photo was expanded and visualized by math filters.



Leifeng Zhang, Martin Hÿtch, Christophe Gatel

CEMES-CNRS & Université Paul Sabatier Toulouse, France

“Ferroelectric Blossoms in the Pond”

Fortunately, in TEM, we observed large flower-like structures aligned along the [001] axis of $BaTiO_3$. These features resemble blossoms gracefully floating on the pond.

Valentina Levak

National Institute of Biology & Jožef Stefan International Postgraduate School, Slovenia

“Chlamydomonas reinhardtii”

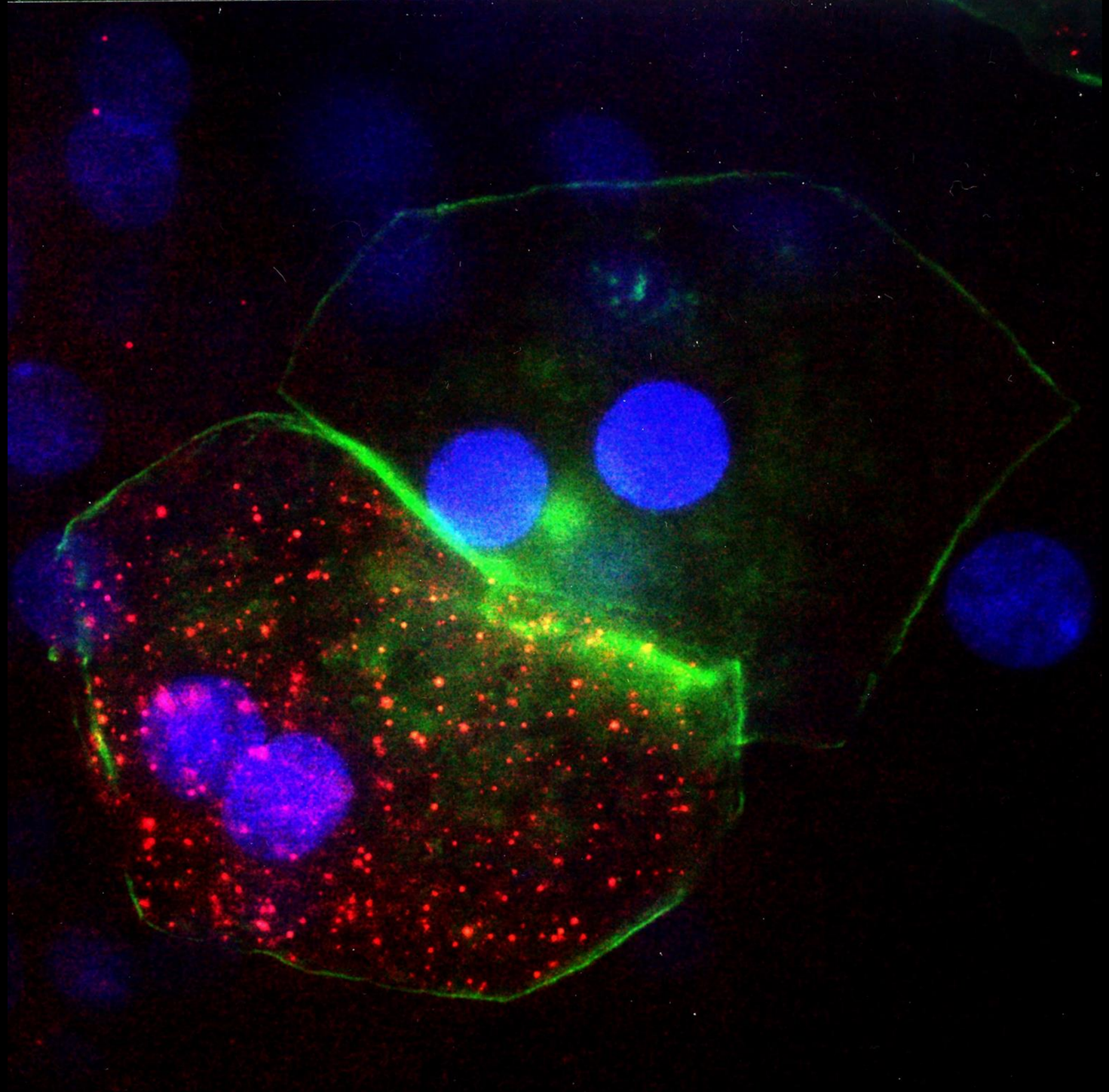
Transmission electron microscopy image showing unicellular green alga *Chlamydomonas reinhardtii* that is undergoing esthetic cell death.

Marija Mirosavljevic, Nives Matijaković Mlinarić, Damir Kralj

Rudjer Boskovic Institute, Croatia

“The Living Architecture of Tufa”

This detailed micrograph showcases the interplay between biotic and abiotic components in tufa — calcium carbonate structures embedded with diatoms and organic filaments. The image was captured using Axia ChemiSEM in low vacuum mode with a backscattered electron detector.

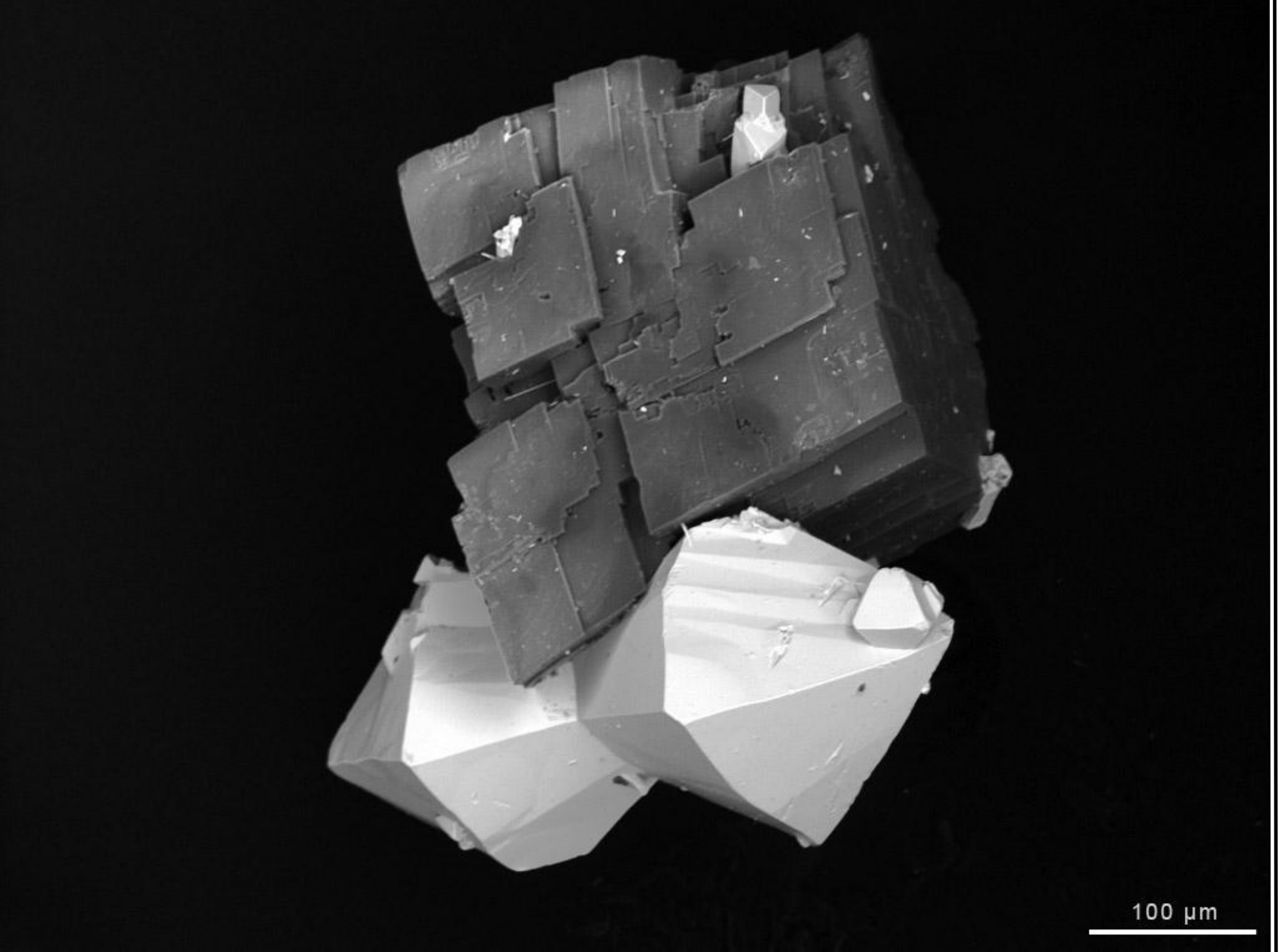


Andreja Erman

Faculty of Medicine, Slovenia

“Life and death of cells”

The image shows two binucleated (blue fluorescence) superficial urothelial cells after immunofluorescence labelling of active caspase 3. The immunoreaction is positive (red fluorescence) in the left cell, demonstrating the onset of apoptotic cell death, while the right cell is still alive due to the negative immunoreaction.

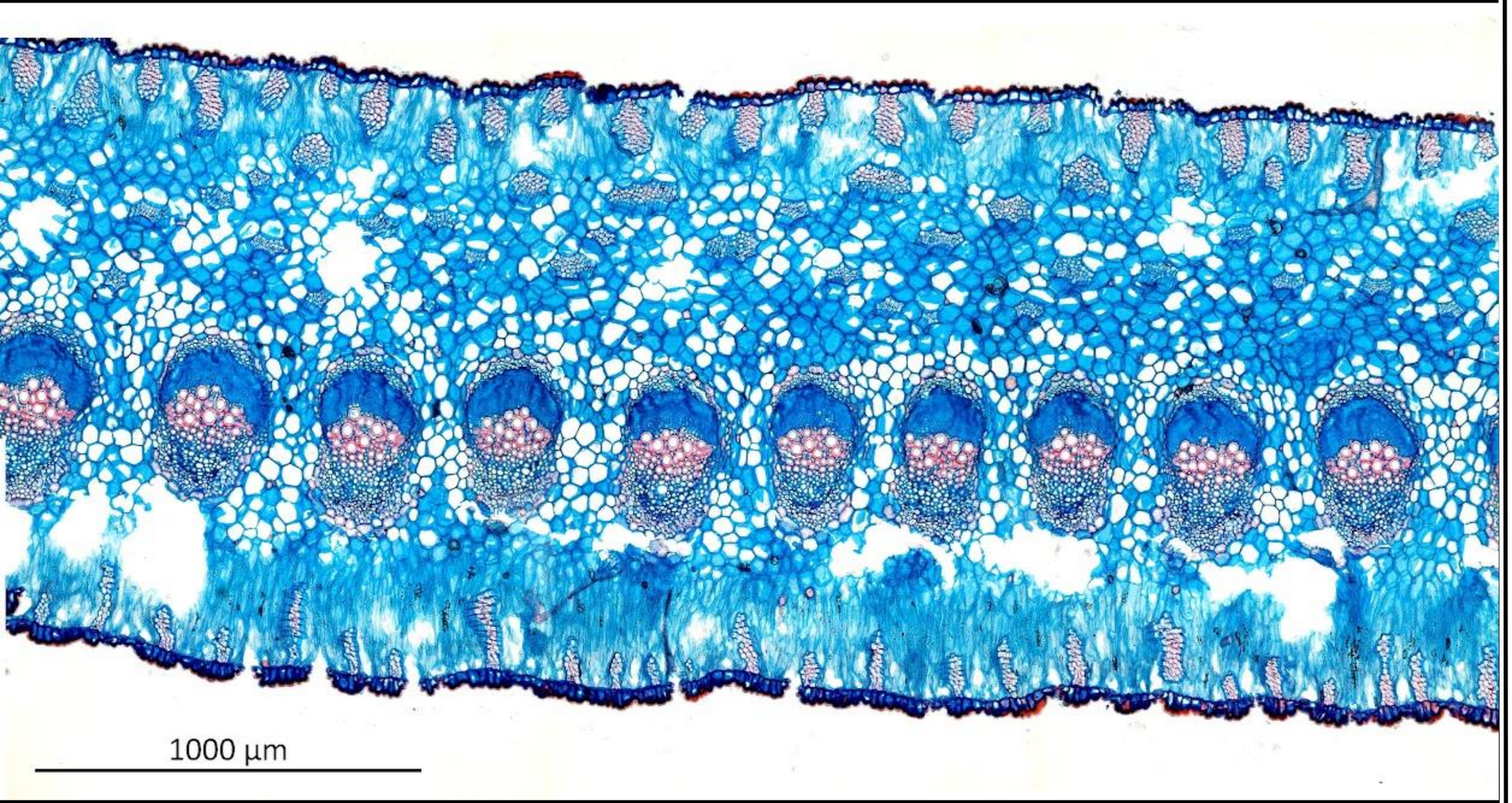


Snježana Mikulčić Pavlaković

Croatian Natural History Museum, Croatia

“Minerals from Trepča/Stari Trg, Kosovo”

Rhombohedral carbonate with pseudotetragonal galena crystals from Trepča/Stari Trg, one of the oldest and deepest Pb-Zn mines in Europe, located in Kosovo. The specimen is housed in the Croatian Natural History Museum in Zagreb.

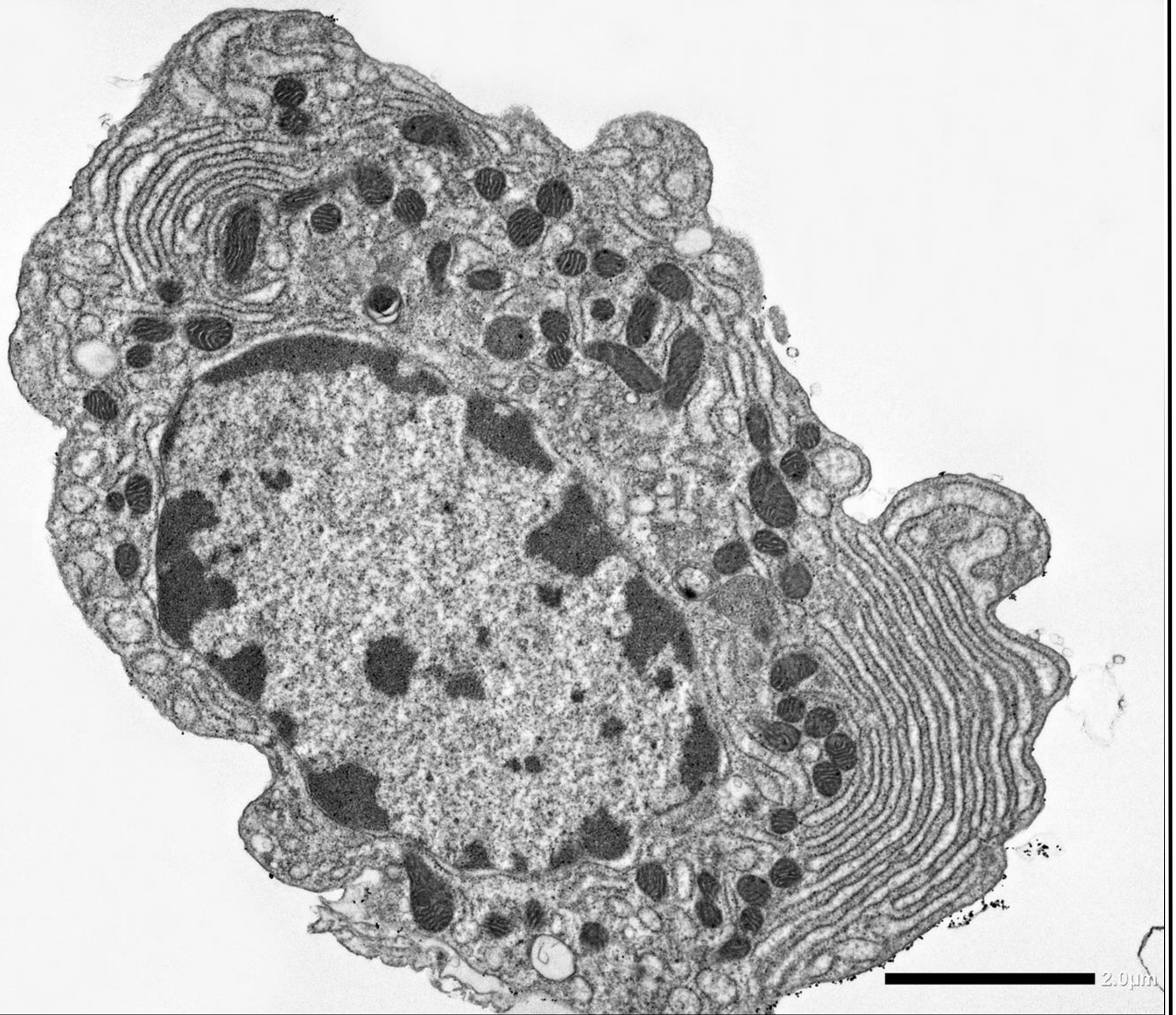


Angela Balzano

University of Ljubljana, Slovenia

“Living Fossil Lace”

Living Fossil Lace depicts a panoramic cross section of a Welwitschia leaf, its repeating vascular bundles forming a rhythmic necklace. Stained tissues glow blue and red, outlining xylem, phloem, and airy parenchyma. Fossil-like yet alive, the pattern merges science and art to reveal evolution’s ordered beauty in miniature, and wonder.

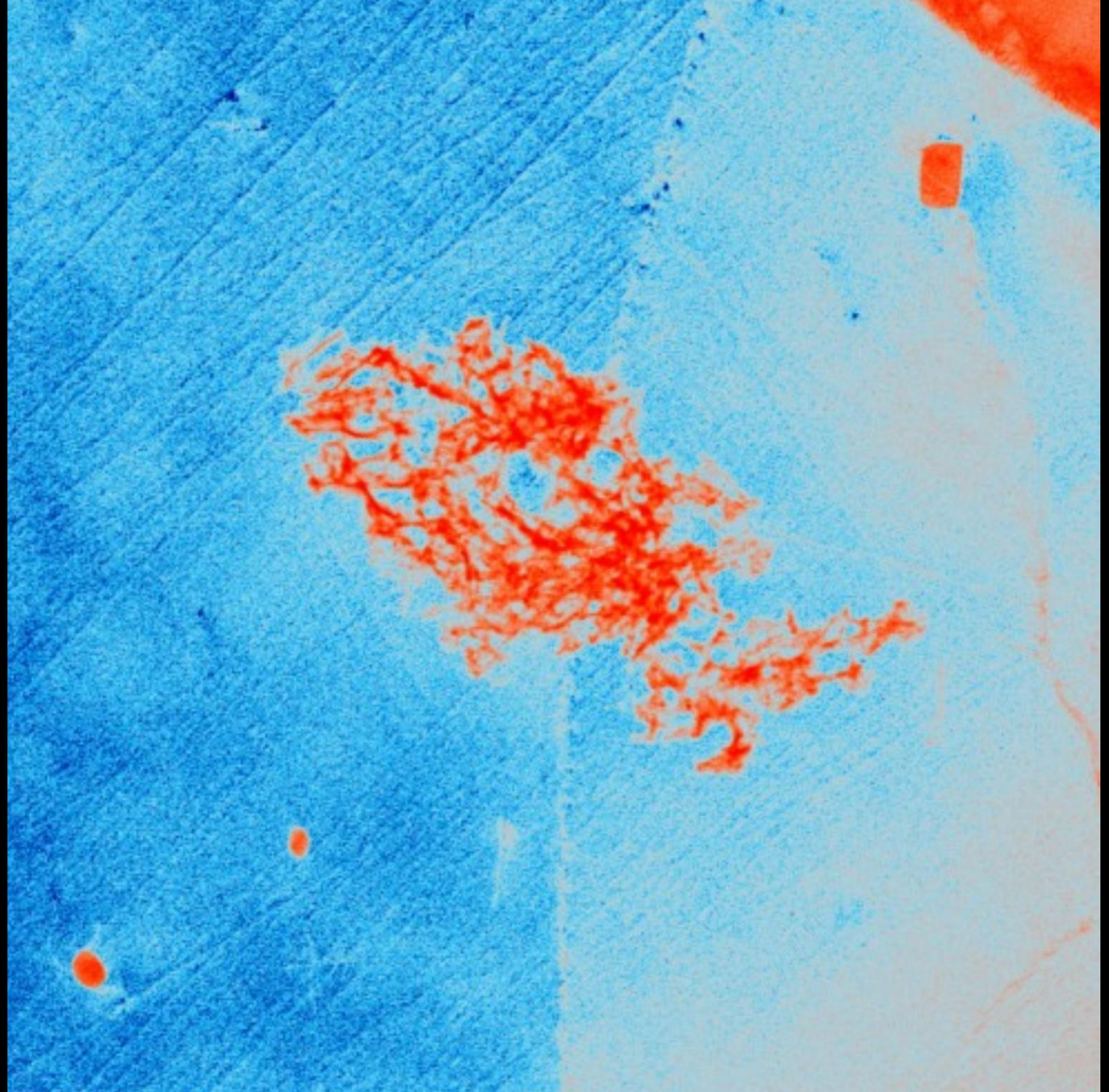


Ida Daniela Perrotta

University of Calabria, Italy

“Microcosm of Malignancy: Plasma Cell in Myeloma”

TEM of a plasma cell from a therapy-resistant multiple myeloma patient. The cell displays numerous mitochondria with well-organized cristae and abundant rough endoplasmic reticulum. The striking abundance of mitochondria reflects the metabolic adaptations linked to therapy resistance, highlighting the pivotal role of mitochondrial dynamics in relapsed multiple myeloma.

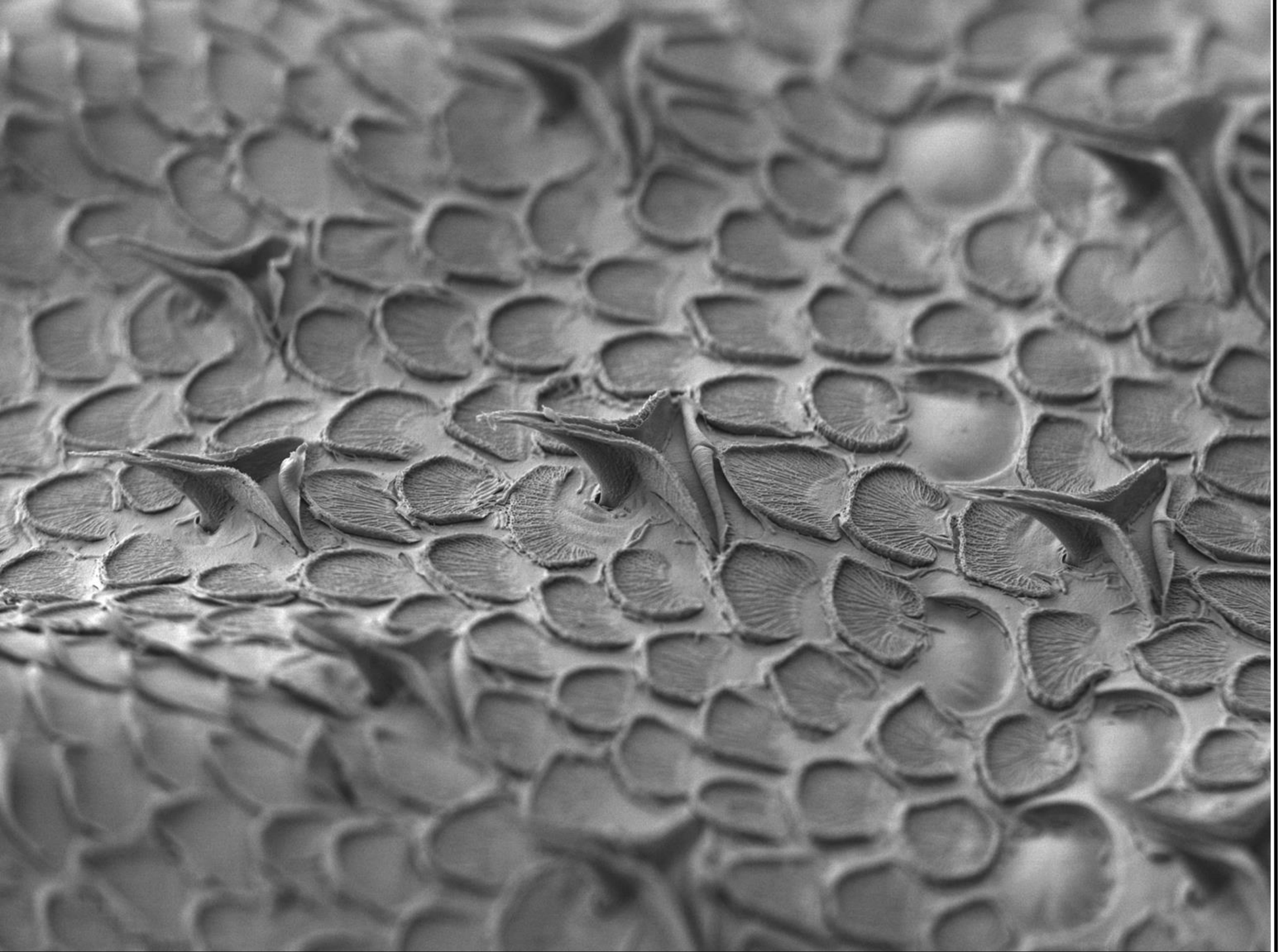


Hannah Cole, Simon Fairclough

University of Cambridge, United Kingdom

“Fish-locations”

Dislocations in the shape of a fish taken using Lorentz STEM microscopy (colourised for visual impact).



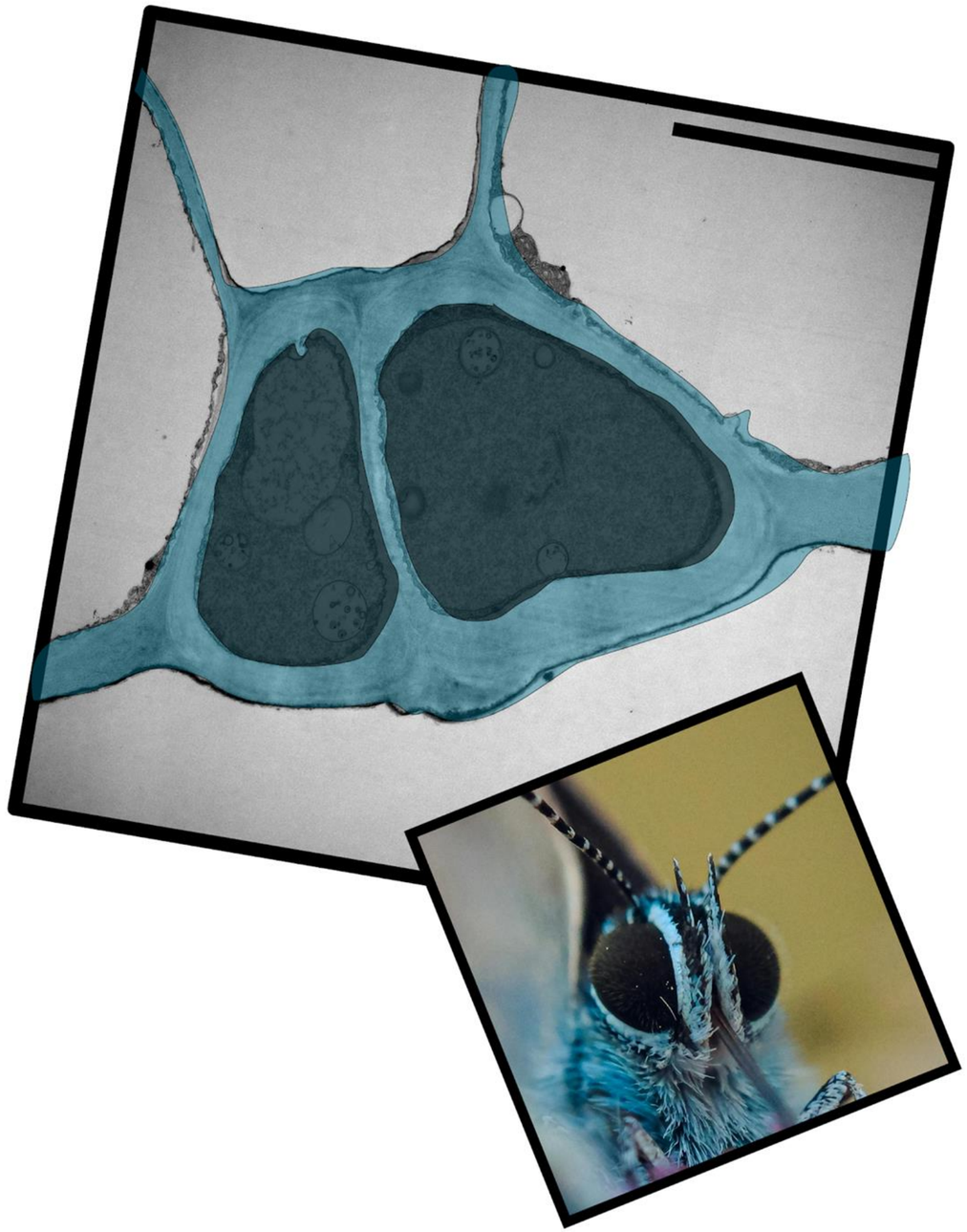
Ana Žuran

University of Ljubljana, Biotechnical Faculty, Slovenia

“Trident to tricorns”

I left my cousins on the reef,
now I munch on hazel leaves.
From trident to tricorns, I made the shift.
Who knows what lurks beneath this drift?

Scanning electron micrograph of *Porcellio scaber*'s dorsal surface, featuring tricorns - a type of sensilla unique to terrestrial isopods, whose function is unknown.



Andrea Elizabeth, Babu Dominic, Cheradil Cheradil

LMU, Germany

“Plant Cell or Butterfly head?”

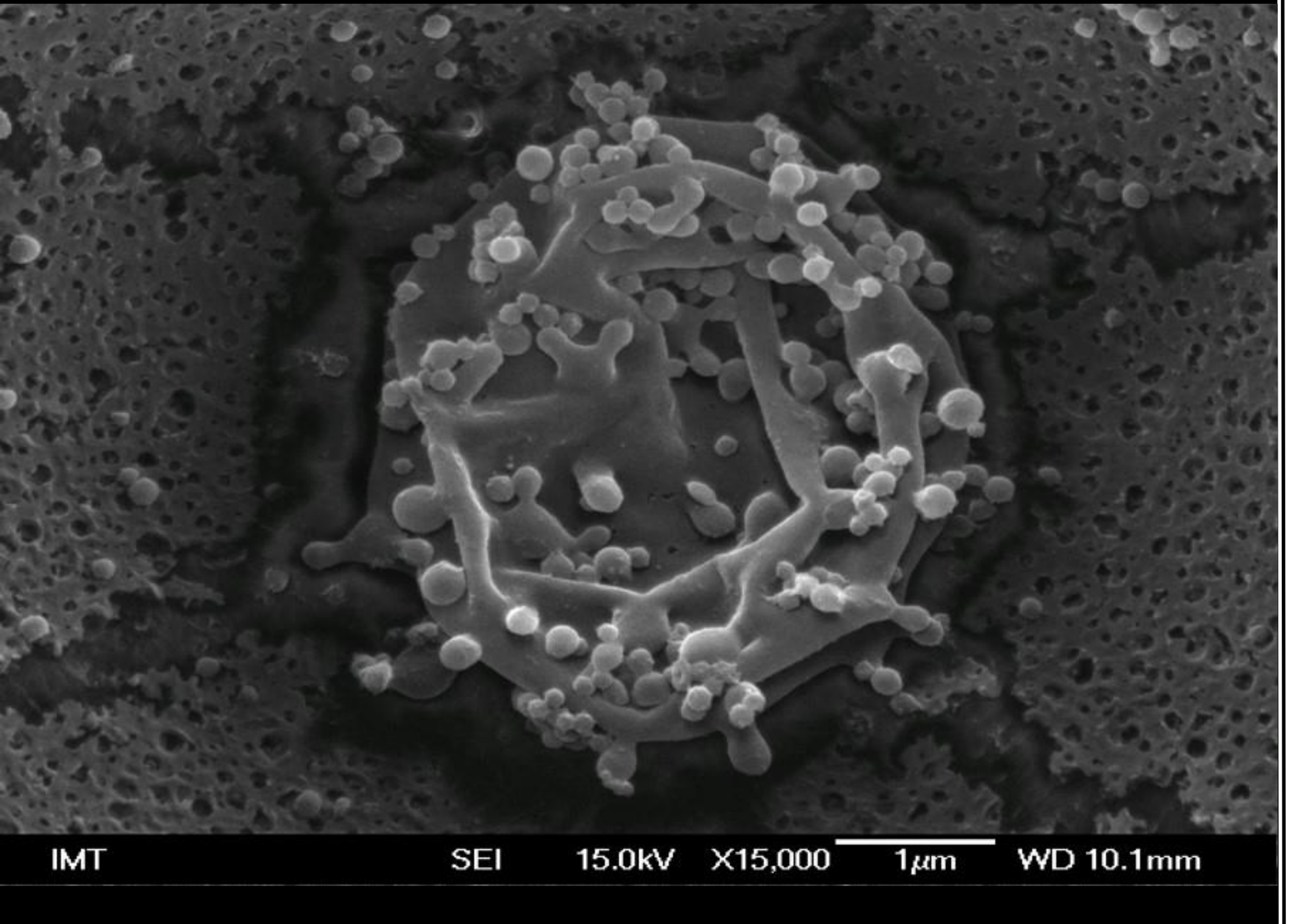
This plant epidermal cell resembles a butterfly’s head, illustrating the hidden wonders of plant tissues. This image unveils unexpected forms within the leaf. Microscopic structures can surprise and delight, blurring our interpretation between plants and animals. Viewers are invited to explore nature through a fresh lens.

Vincenzo Grillo, Paolo Rosi

Cnr-NANO Modena, Italy

“An electron bright idea”

The image represents the out-of-focus TEM image of a MEMS based aberration corrector imaged in out of focus conditions. The caustics are due to circular electrodes. The MEMS is positioned in the C3 condenser position of a Thermofisher Spectra 300. It resembles a bulb for a bright idea.

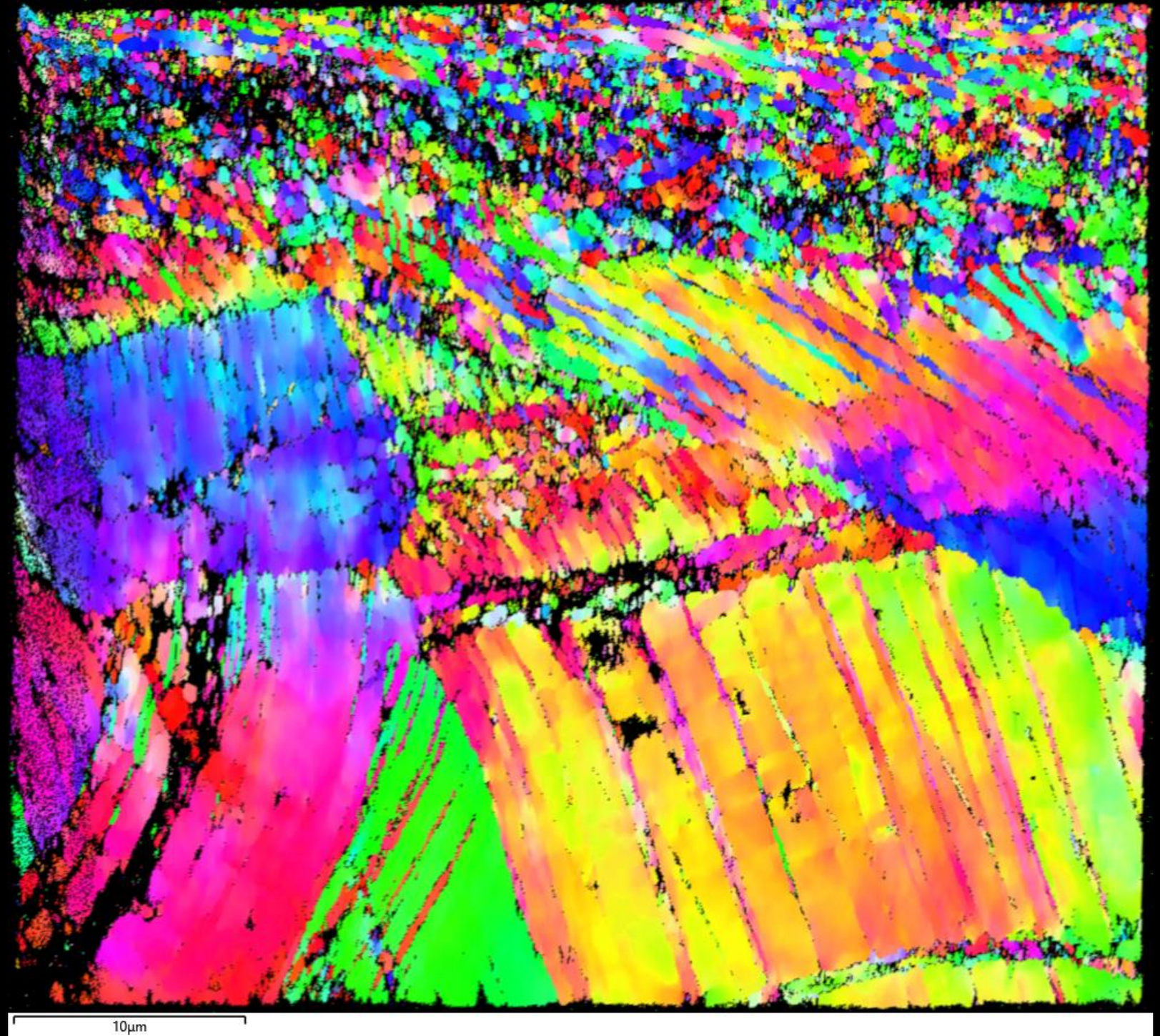


Anna Romolo[1], Matej Hočevar[2], Aleš Iglič[1], Veronika Kralj-Iglič[1]

[1]University of Ljubljana, Slovenia
[2]Institute of Metals and Technology, Ljubljana, Slovenia

"Shedding of extracellular vesicles from erythrocyte membrane"

Human erythrocytes were aged 7 days at 4 degrees. Cells were sedimented and supernatant was subjected to differential ultracentrifugation. A residual cell was present in the sediment. The sample was treated with OsO_4, dried and imaged with the scanning electron microscope.

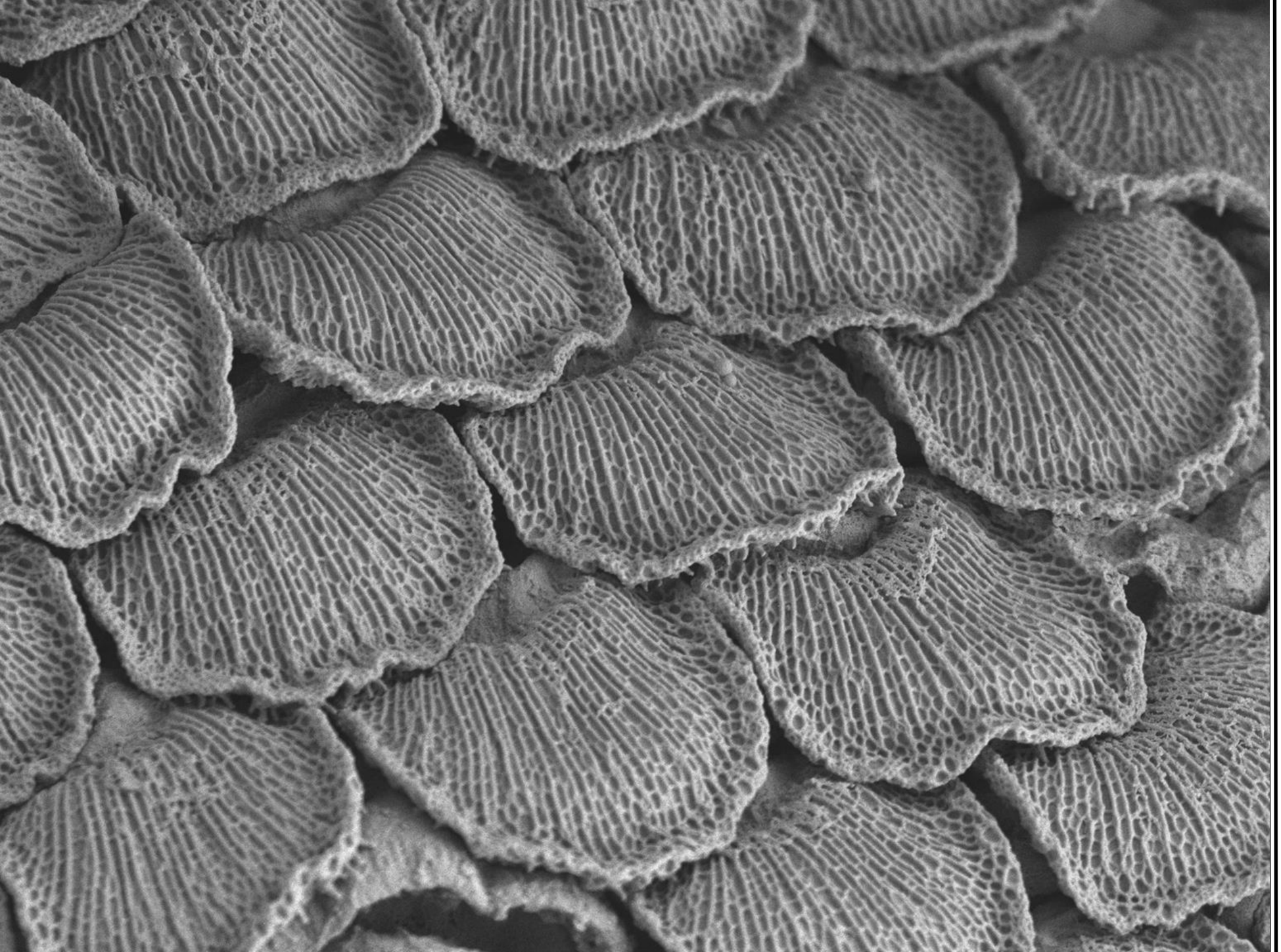


Bor Arah[1], Gregor Kapun[2]

[1]Institute Jozef Stefan, Slovenia
[2]National Institute of Chemistry, Slovenia

“Ancient statuette lamella EBSD”

IPF X color image - EBSD of a lamella that was part of a statuette from the 14th century.



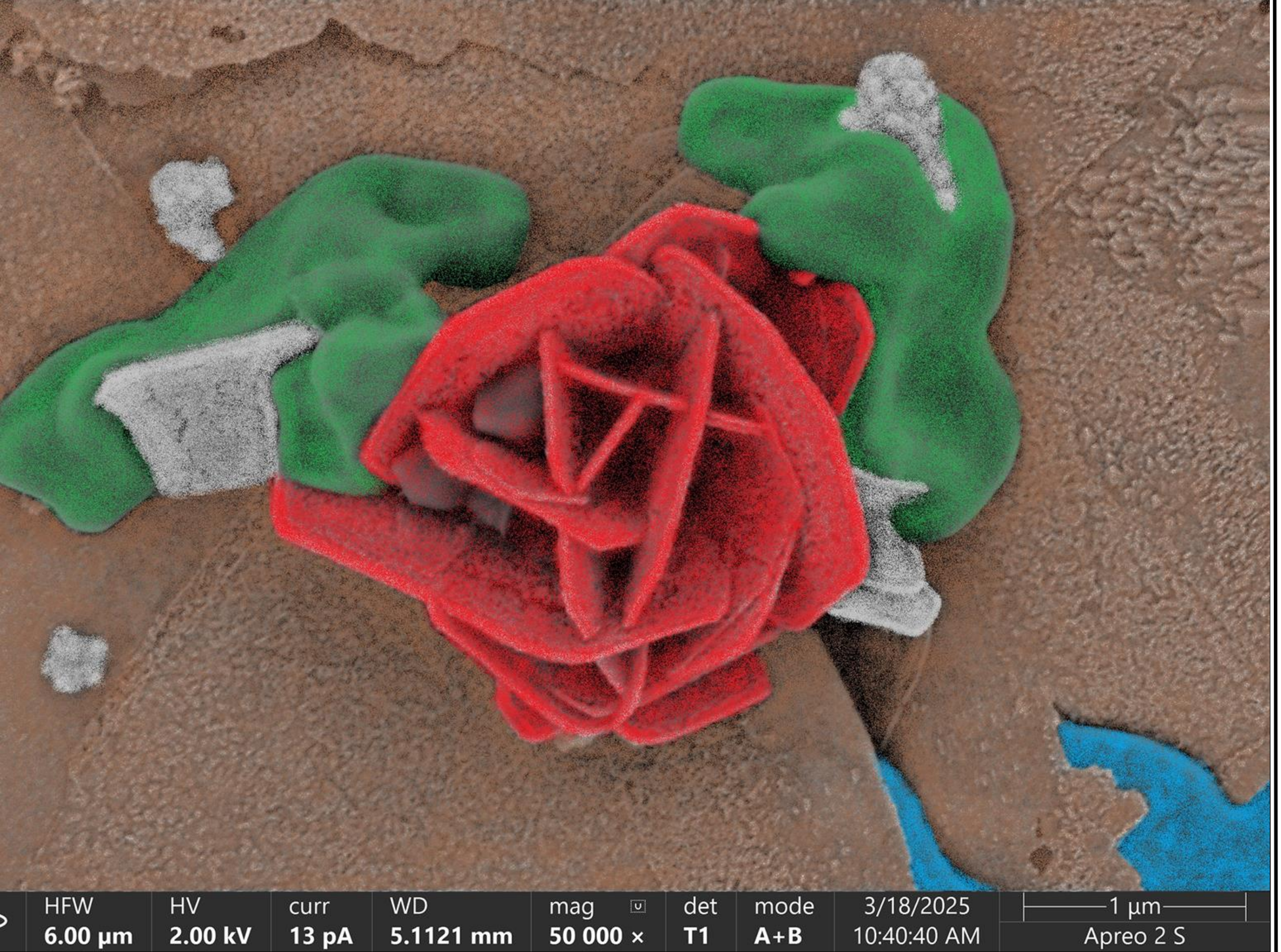
Ana Žuran

University of Ljubljana, Biotechnical Faculty, Slovenia

“Oniscidean jewels”

I left my cousins on the reef,
hoping that won’t cause a beef.
The family jewels, I took them all,
now I’m the fairest of them all!

Scanning electron micrograph of *Porcellio scaber*’s dorsal surface, just before moulting, showing striking microstructures – a puzzling feature of terrestrial isopods.

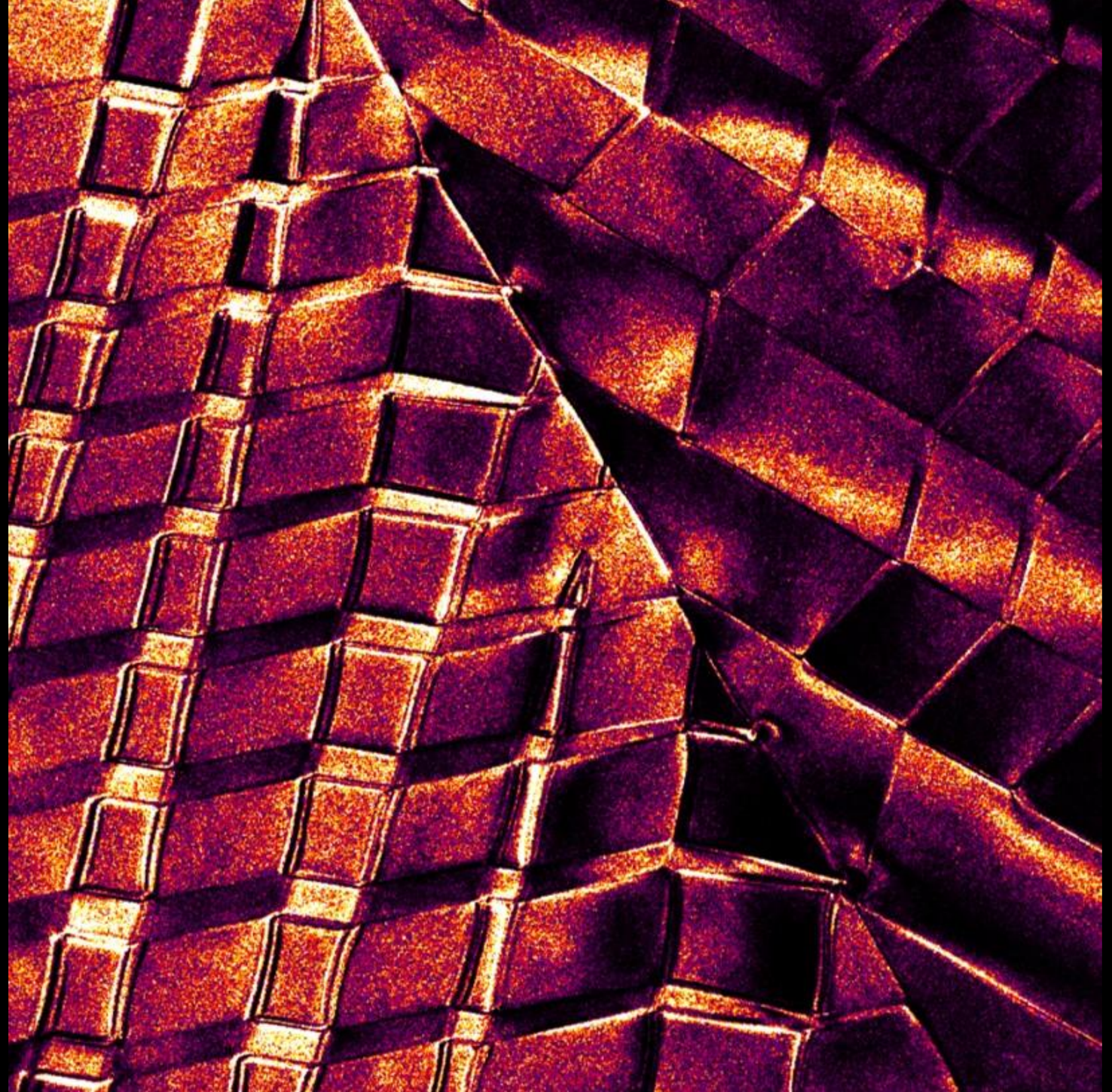


Mitja Kostelec[1,2]

[1]Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia
[2]University of Nova Gorica, Slovenia

“Micron Rose”

Scanning electron micrograph (SEM) of a rose-like iron-oxide microstructure on a nickel substrate. Petal-like lamellae curl into a rosette across a fractured surface. Grayscale image false-colored in an EDS-inspired palette.

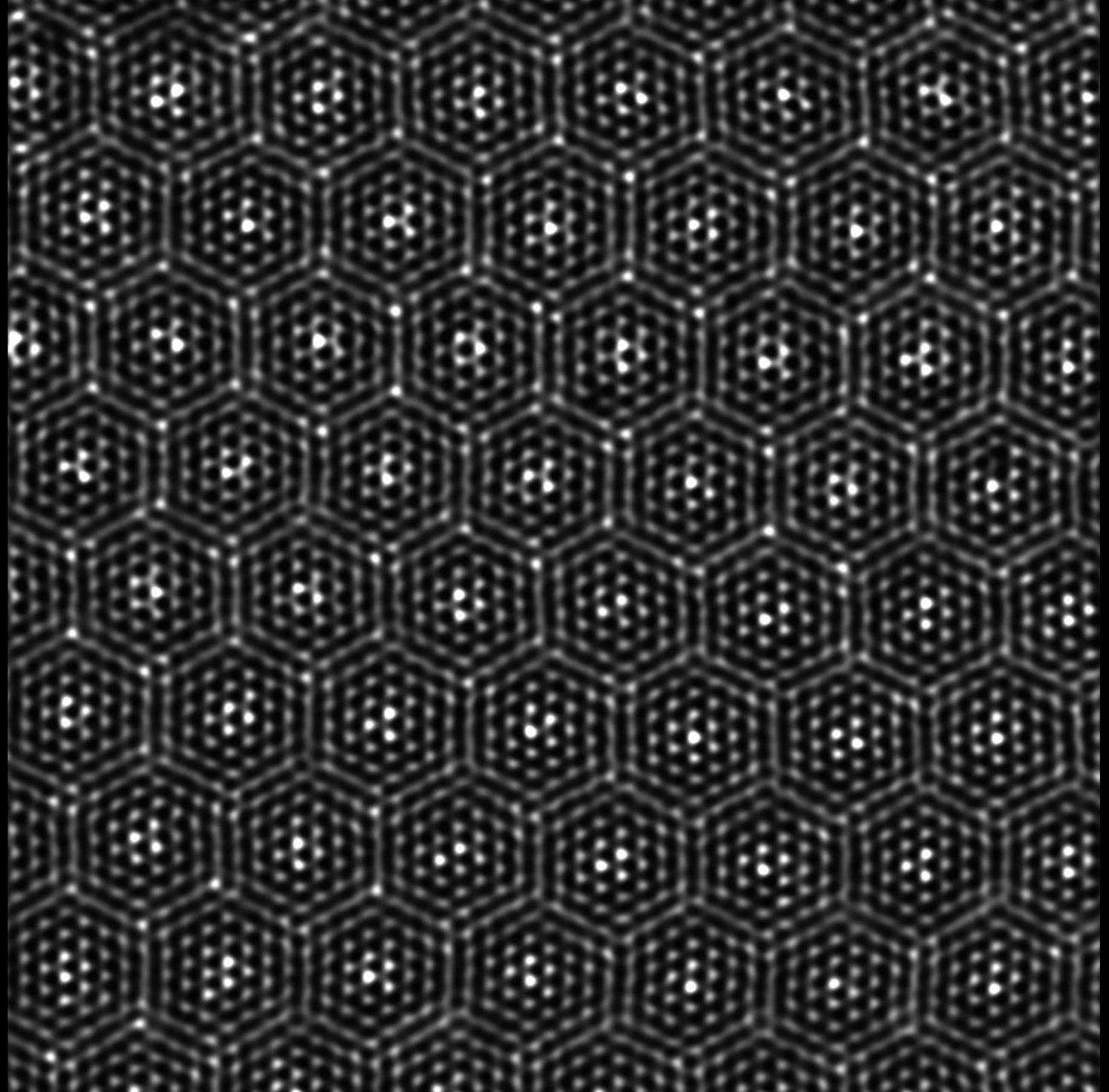


Katarina Žiberna[1,2], Maja Koblar[1], Janina Roknić[1,2]

[1]Electronic Ceramics Department, Jožef Stefan Institute, Ljubljana, Slovenia
[2]Jožef Stefan International Postgraduate School, Ljubljana, Slovenia

“Ljubljana Dragon's skin crowned by sunlight”

TEM image of the domain structure in lead-free ferroelectric K0.5Na0.5NbO3, acquired with a CETA camera on a TF Spectra 300.

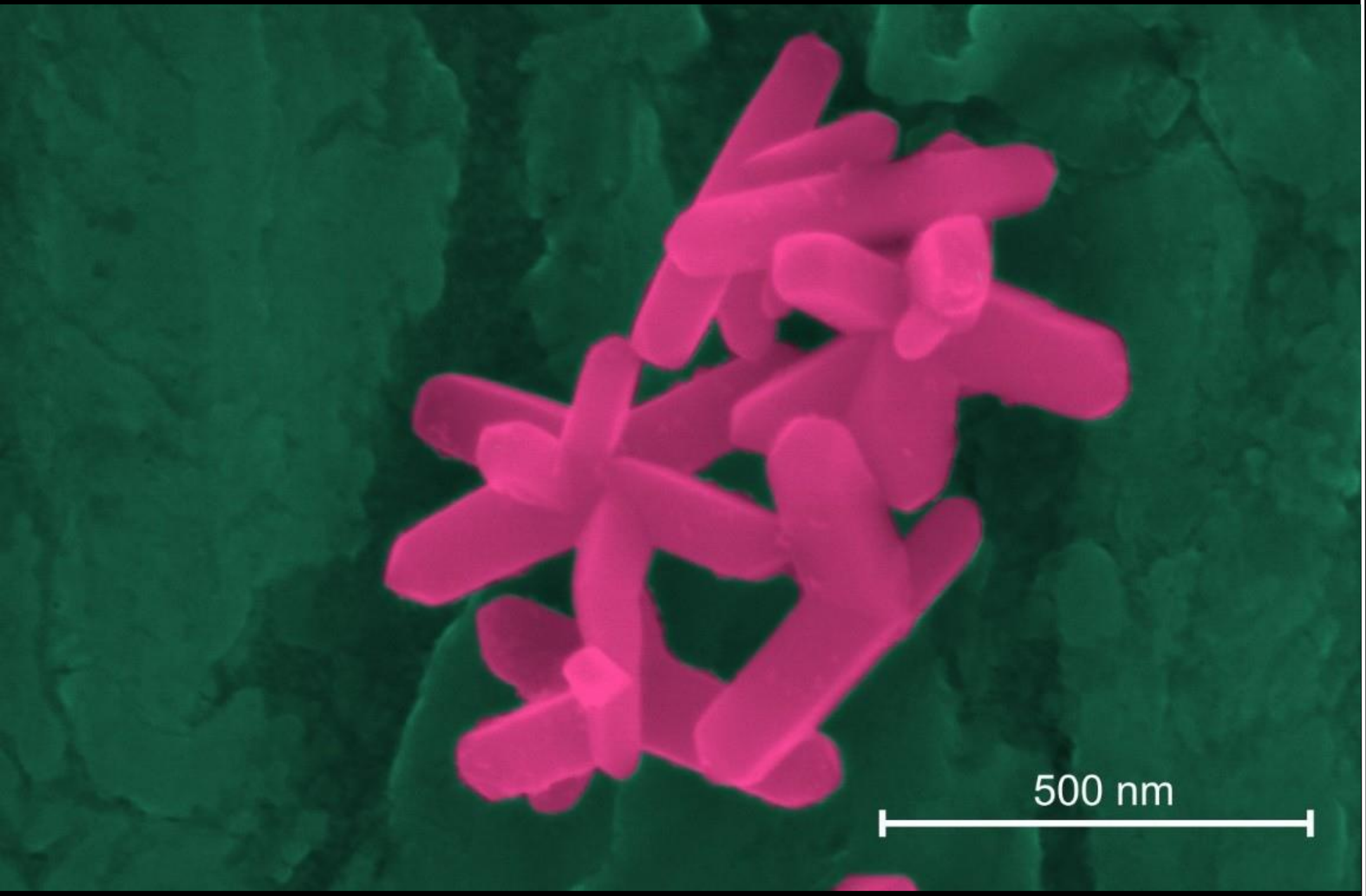


Vanessa Costa-Ledesma[1], Josep Manel Rebled[2], Lluis Lopez Conesa[2], Francesca Peiró Martinez[1]

[1]Universitat de Barcelona, Spain
[2]Centres Científics i Tecnològics de la Universitat de Barcelona, Spain

“Tilted WS_2 Bilayer: Hexagonal Symmetry and the Dance of Individual Atoms”

Scanning transmission electron microscopy (STEM) image of a tilted WS_2 bilayer. Contrast variations arise from the superposition of atomic columns introduced by the tilt. Transient hops—the “dance” of individual atoms—accentuate specific positions while preserving crystallinity, revealing order through motion at the atomic scale.

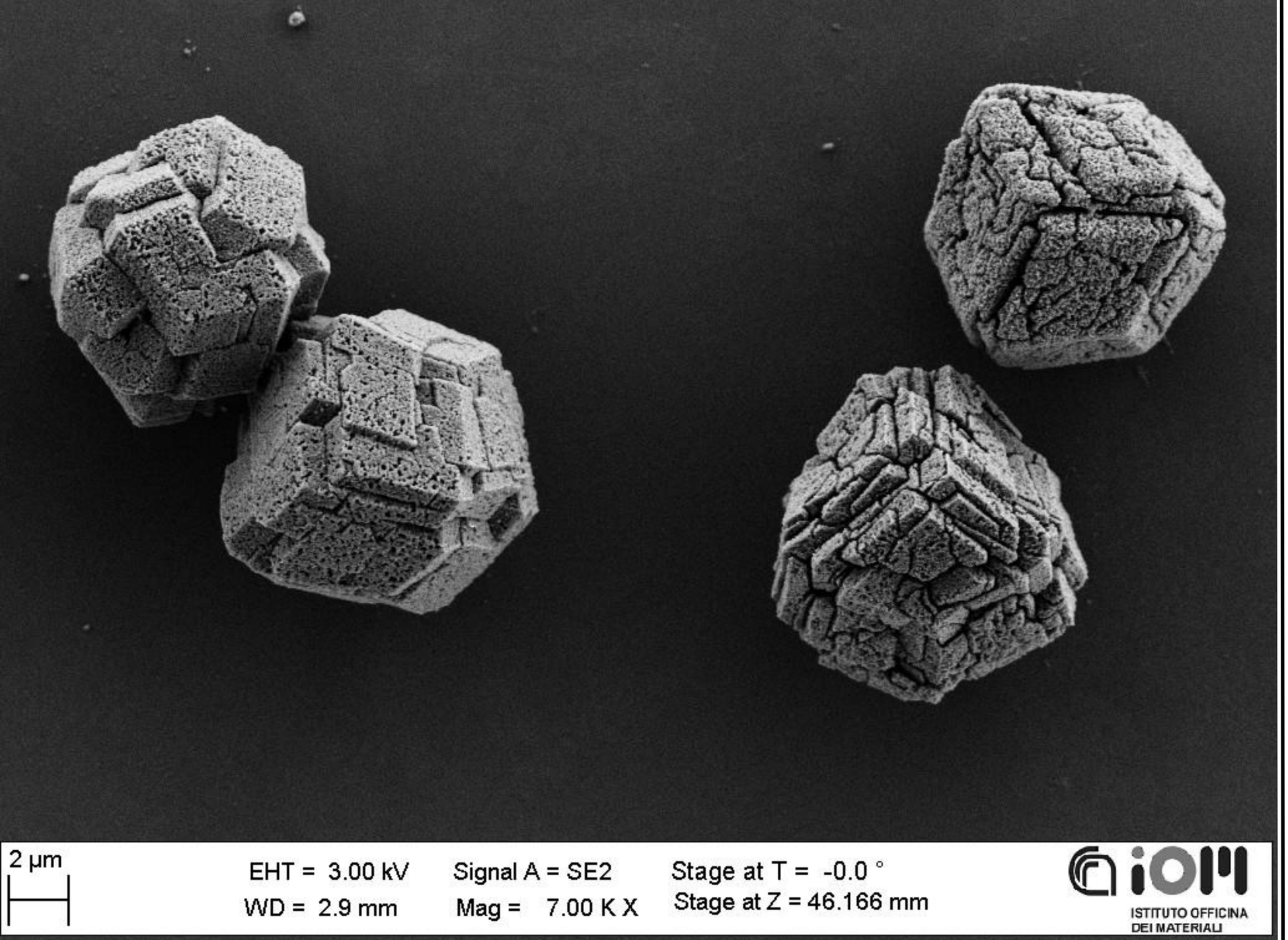


Nik Gračanin

Jožef Stefan Institute, Slovenia

“TiO2 microcrystallites on aluminium”

TiO_2 microcrystallites (magenta) with shapes reminiscent of anti-tank obstacles on aluminium pin. Taken with ThermoFisher Verios SEM in immersion mode, beam current at 50 pA and 5 kV voltage. Colored with Photoshop.

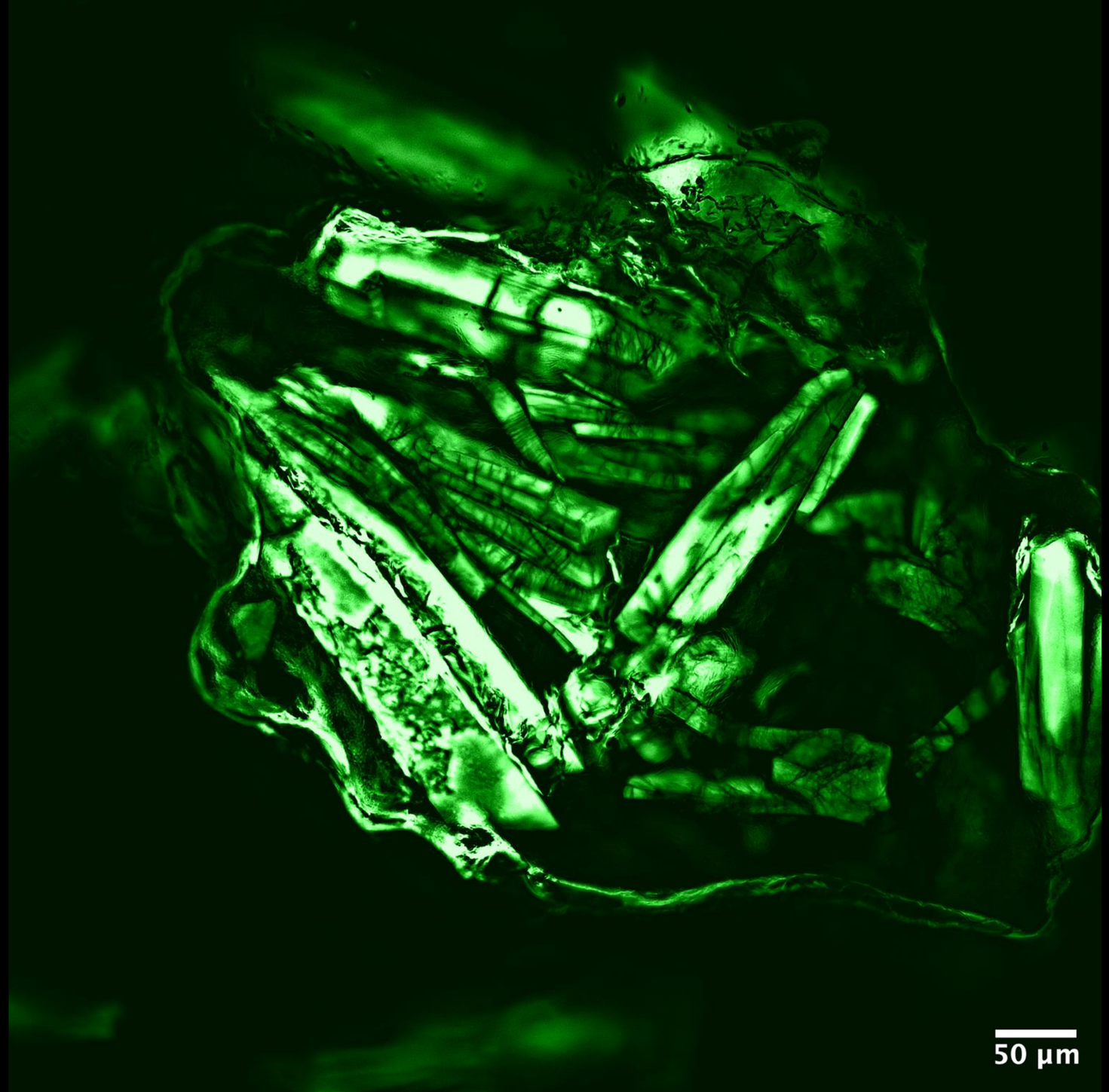


Behnaz Abbasgholi

CNR-IOM - Istituto Officina dei Materiali, Italy

“Porous Polyhedral MOF Crystals Observed by SEM”

An SEM image of porous polyhedral metal–organic framework crystals presented in raw form without post-processing.

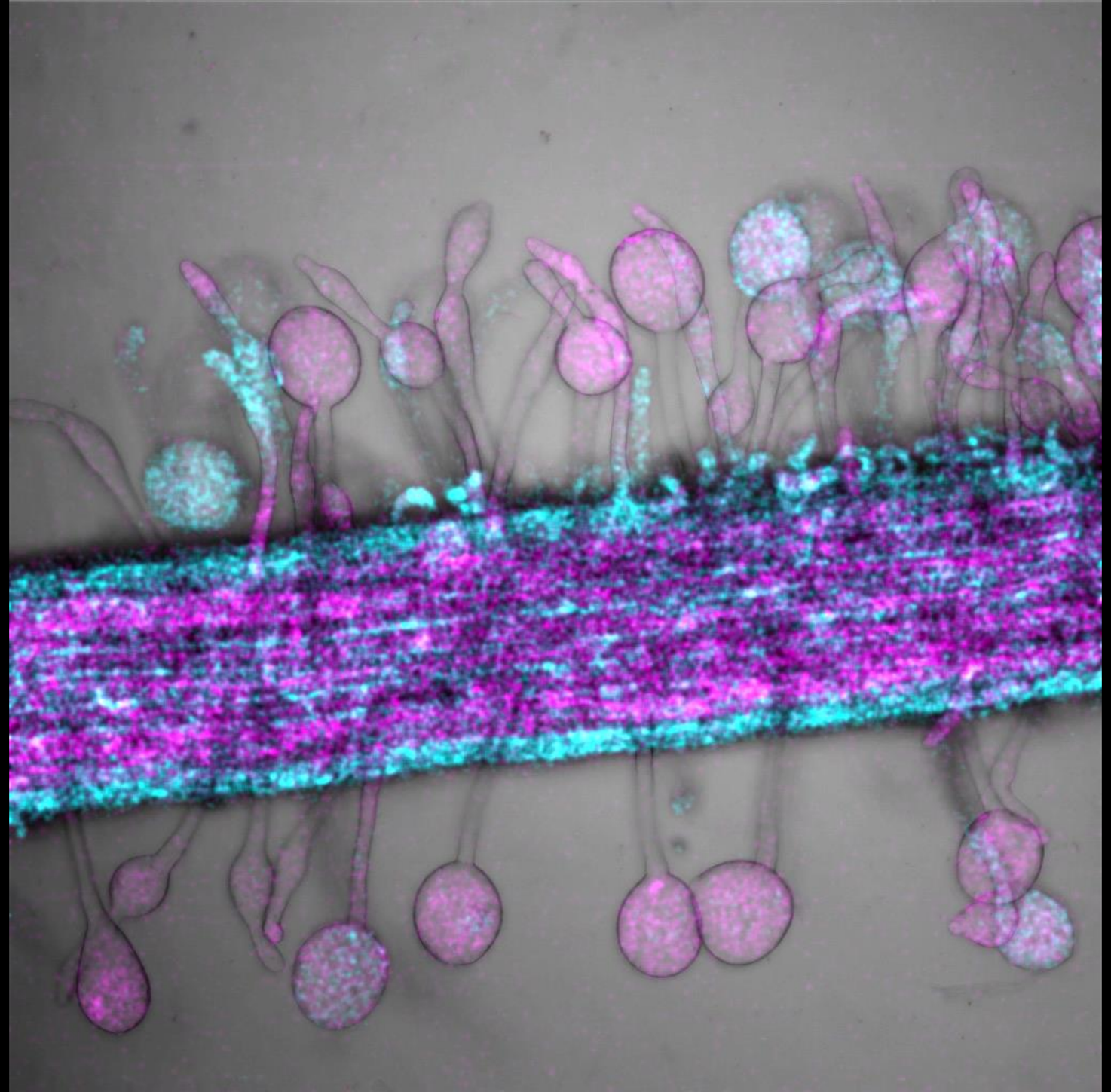


Min Chevalier Kwon[1], Amatassalam Ben Meriem[1], Jan Pieter Abrahams[1,2]

[1]University of Basel, Switzerland
[2]Paul Scherrer Institut (PSI), Laboratory of Nanoscale Biology

“Liquem Vitae”

Graphene liquid cell electron microscopy (GLC-EM) preserves eGFP crystals in native hydrated state, avoiding flash-freezing limitations of cryo-EM. This alternative preservation method maintains protein functionality under room temperature liquid conditions, enabling electron imaging of biomolecules and diffraction analysis of crystalline proteins in liquid state at room temperature.

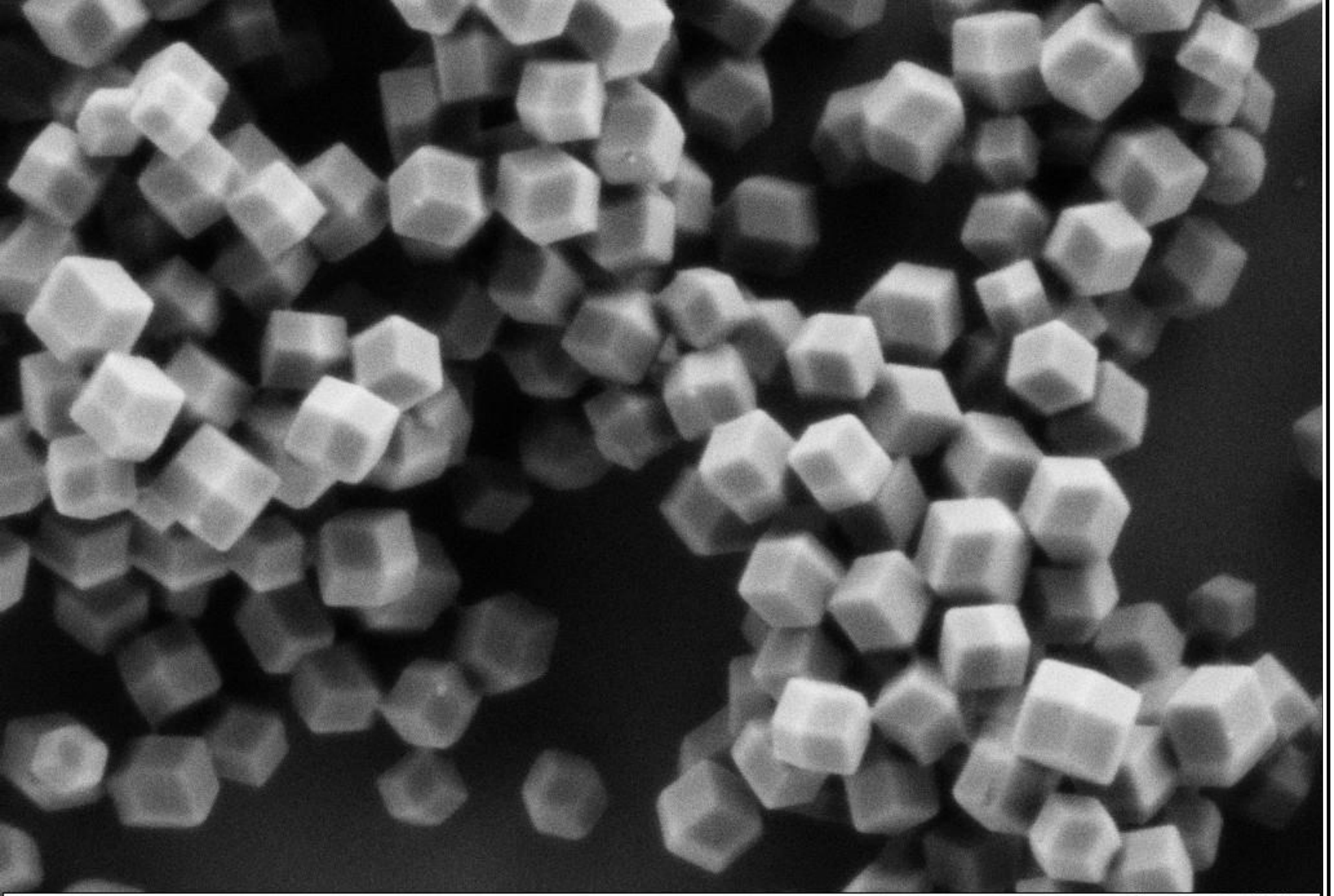


Katja Fink

National Institute of Biology, Slovenia

“Potato root hair on party”

Confocal micrograph of a potato root hair expressing a multicystatin-based fluorescent reporter of jasmonic acid–responsive gene expression. Two Z-stack sections are pseudo-colored and overlaid on the transmitted light image.

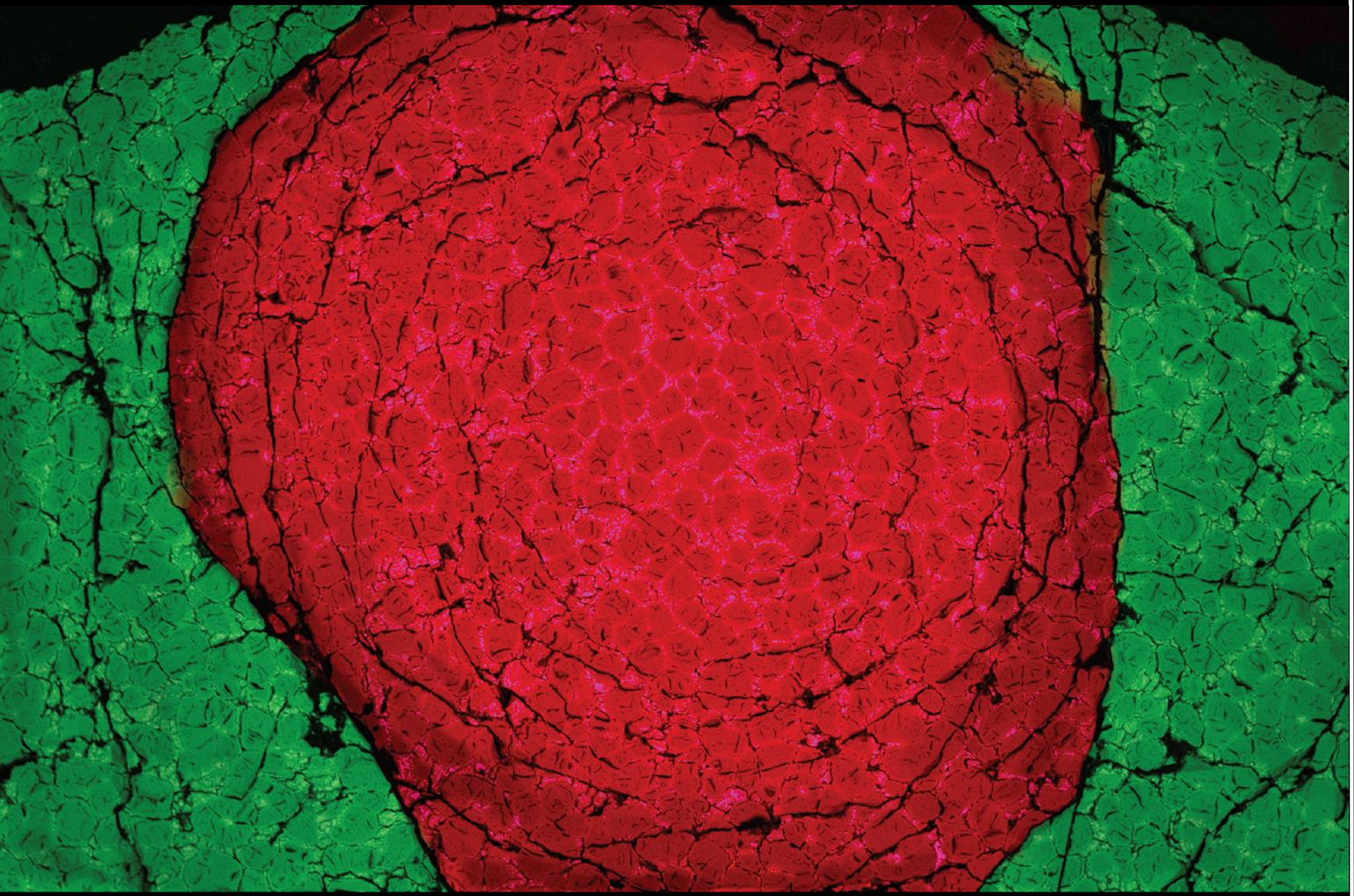


Behnaz Abbasgholi

CNR-IOM - Istituto Officina dei Materiali, Italy

"Polyhedral MOF Crystals Observed by SEM"

An SEM image of nanoscale polyhedral metal–organic framework crystals presented in raw form without post-processing (scale bar: 200 nm).

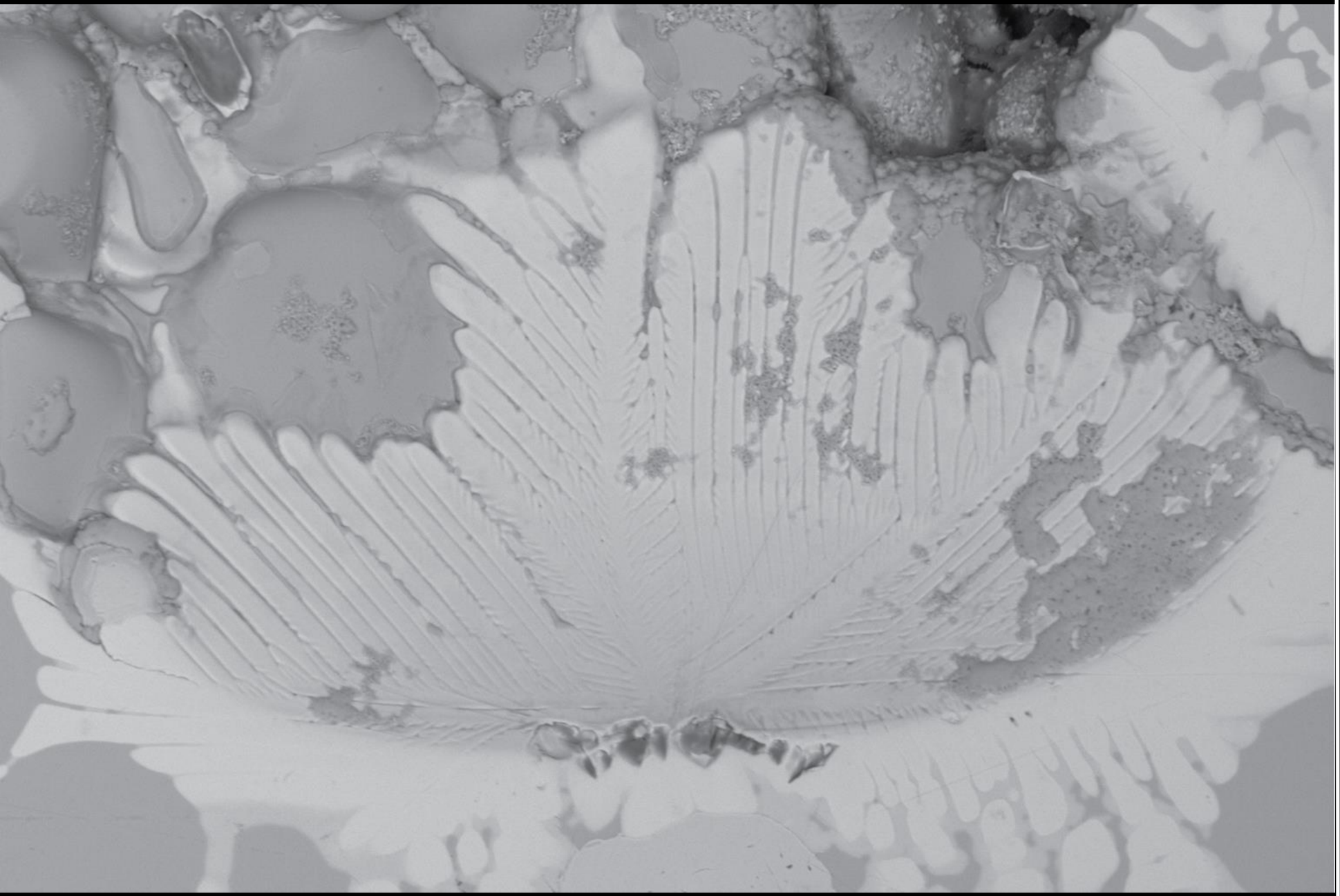


Aleksander Učakar[1], Anja Pajek[2]

[1]Jožef Stefan Institute, Slovenia
[2]Faculty of Chemistry and Chemical Technology, Slovenia

“Strontium Hexaferrite Flower”

Red Strontium Hexaferrite Rose bud bursting out of the reoxidized microstructure.

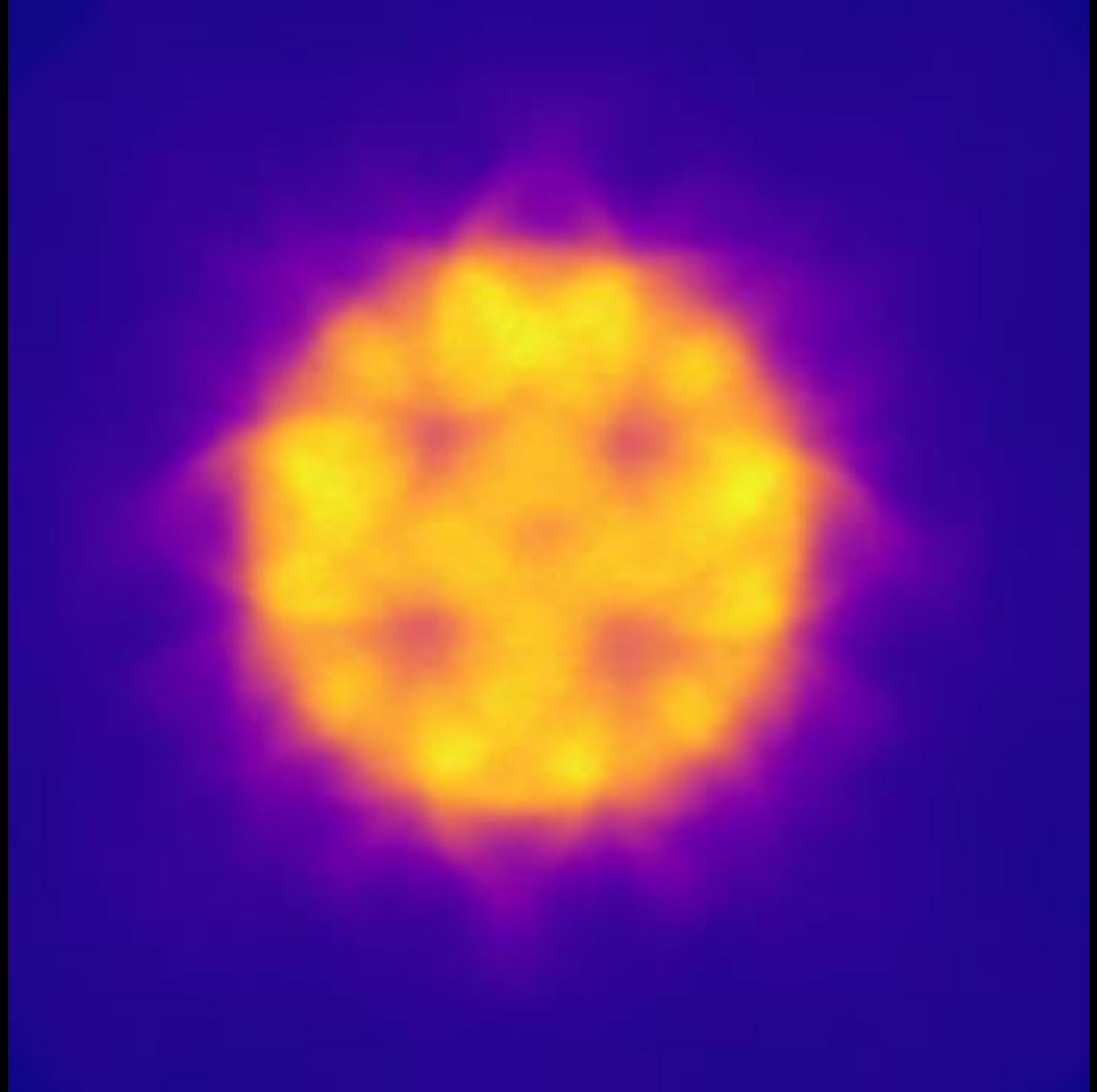


Aleksander Učakar

Jožef Stefan Institute, Slovenia

“Snowflake trapped in a crystal”

A dendritic structure on the edge of the pore has formed in the form of a snowflake.

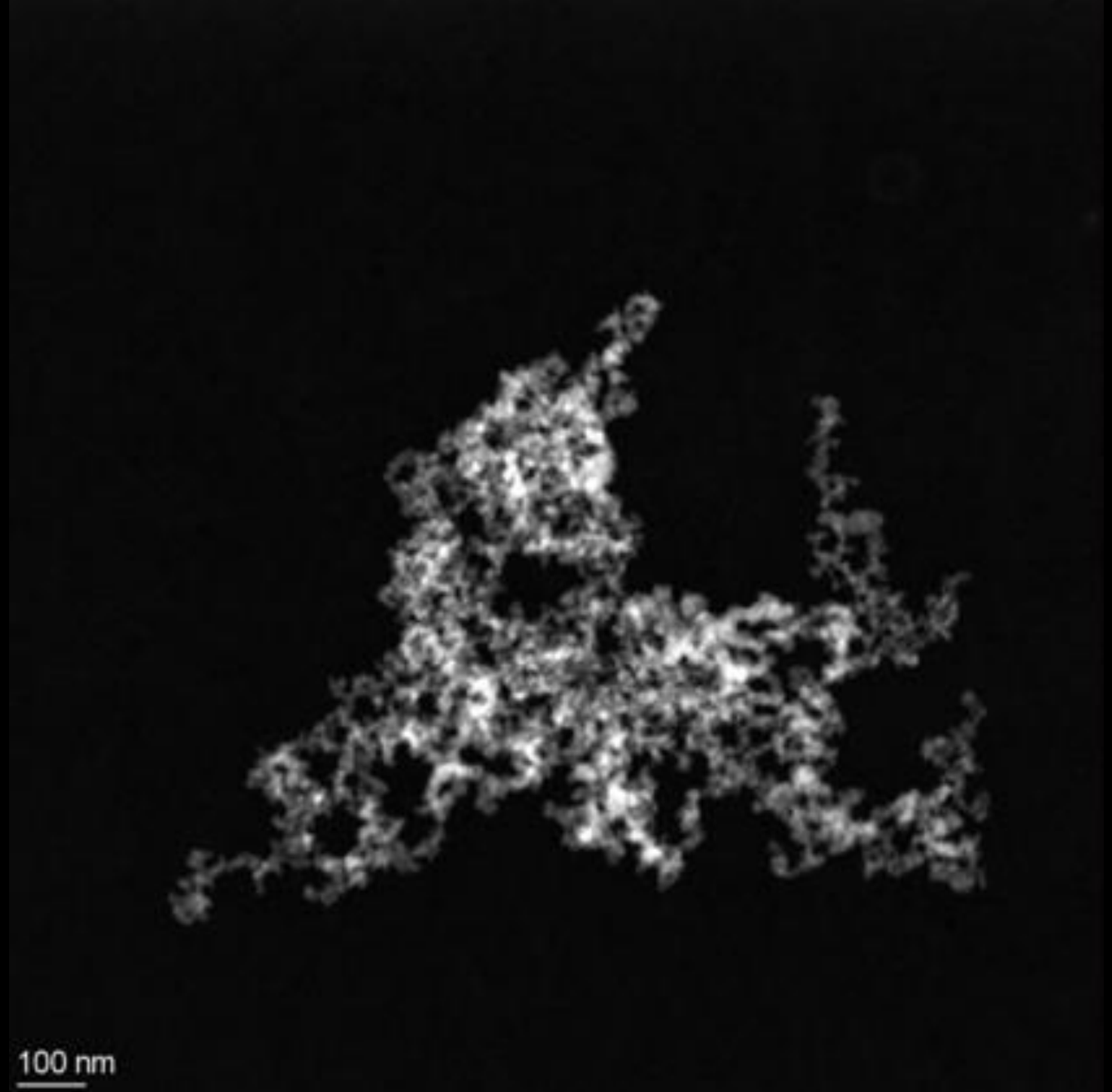


Meryem Lachhab[1,2], Mojca Otoničar[1,2]

[1]Jožef Stefan Institute, Slovenia
[2]Jožef Stefan International Postgraduate School, Ljubljana, Slovenia

“Dahlia flower”

Captured on a Spectra 300, this 10 nm strontium titanate crystal diffraction pattern resembles a dahlia in full bloom, demonstrating the harmony between science and art and merging crystalline order with nature’s repeating artistic geometry.

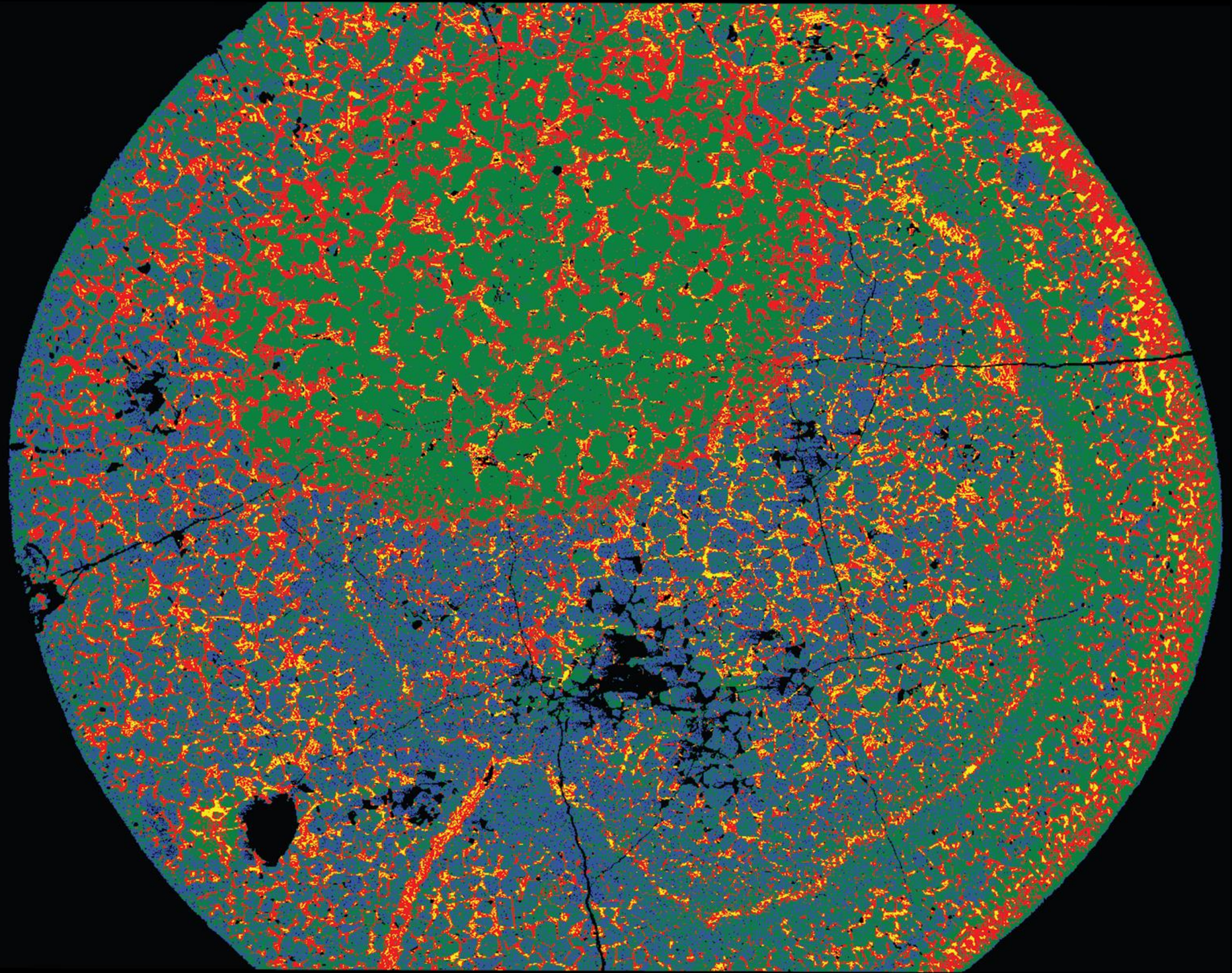


Noa Olluyn

Sciensano, Belgium

“Fantasy at the nanoscale”

This HAADF-STEM micrograph, capturing synthetic amorphous silica at 88.000x magnification, reveals a singular aggregate of particles whose morphology strikingly resembles that of a fantastical unicorn.

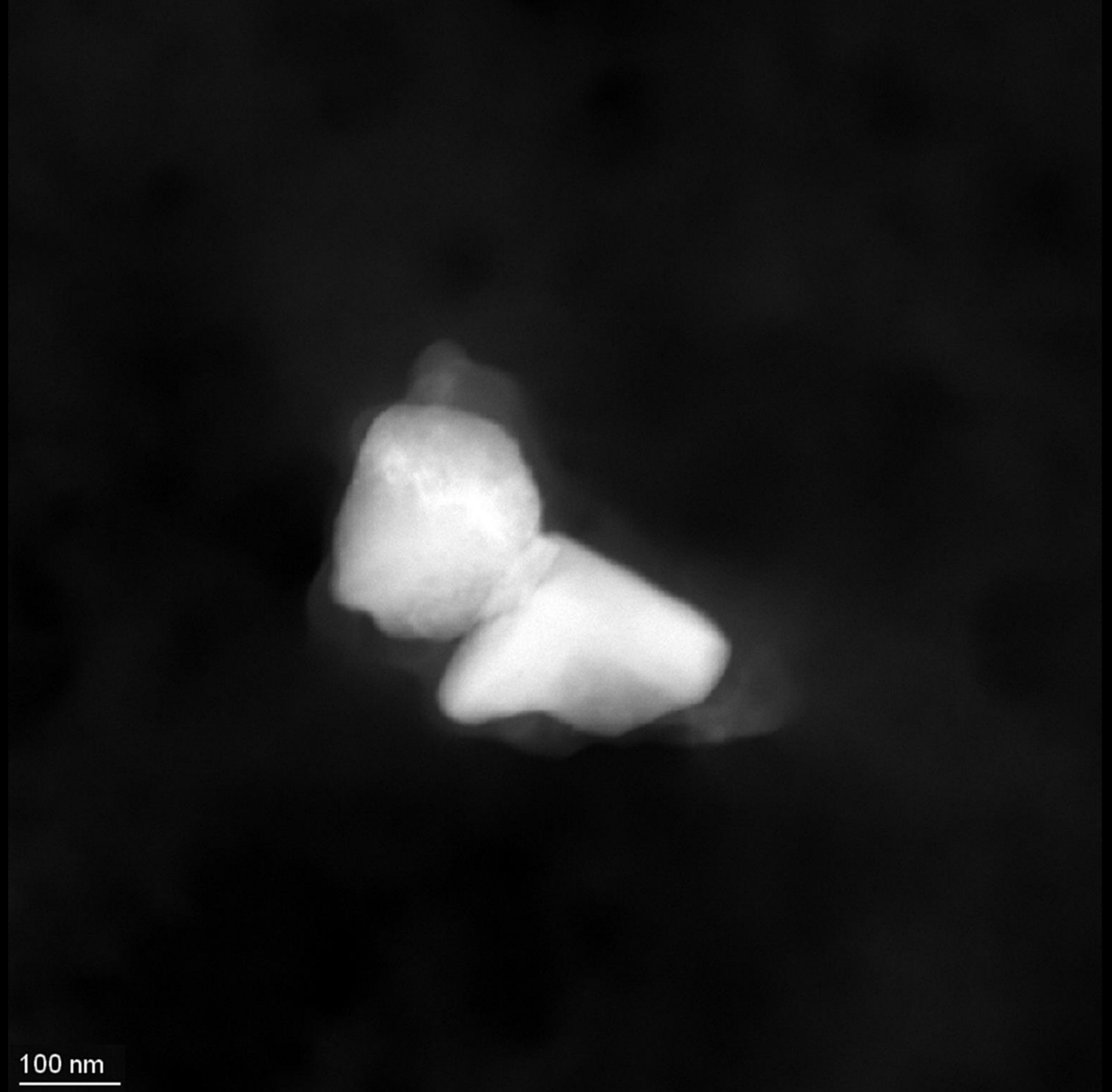


Aleksander Učakar

Jožef Stefan Institute, Slovenia

“Japanese Fire Fan”

Japanese Fire Fan blowing leaves in late autumn.

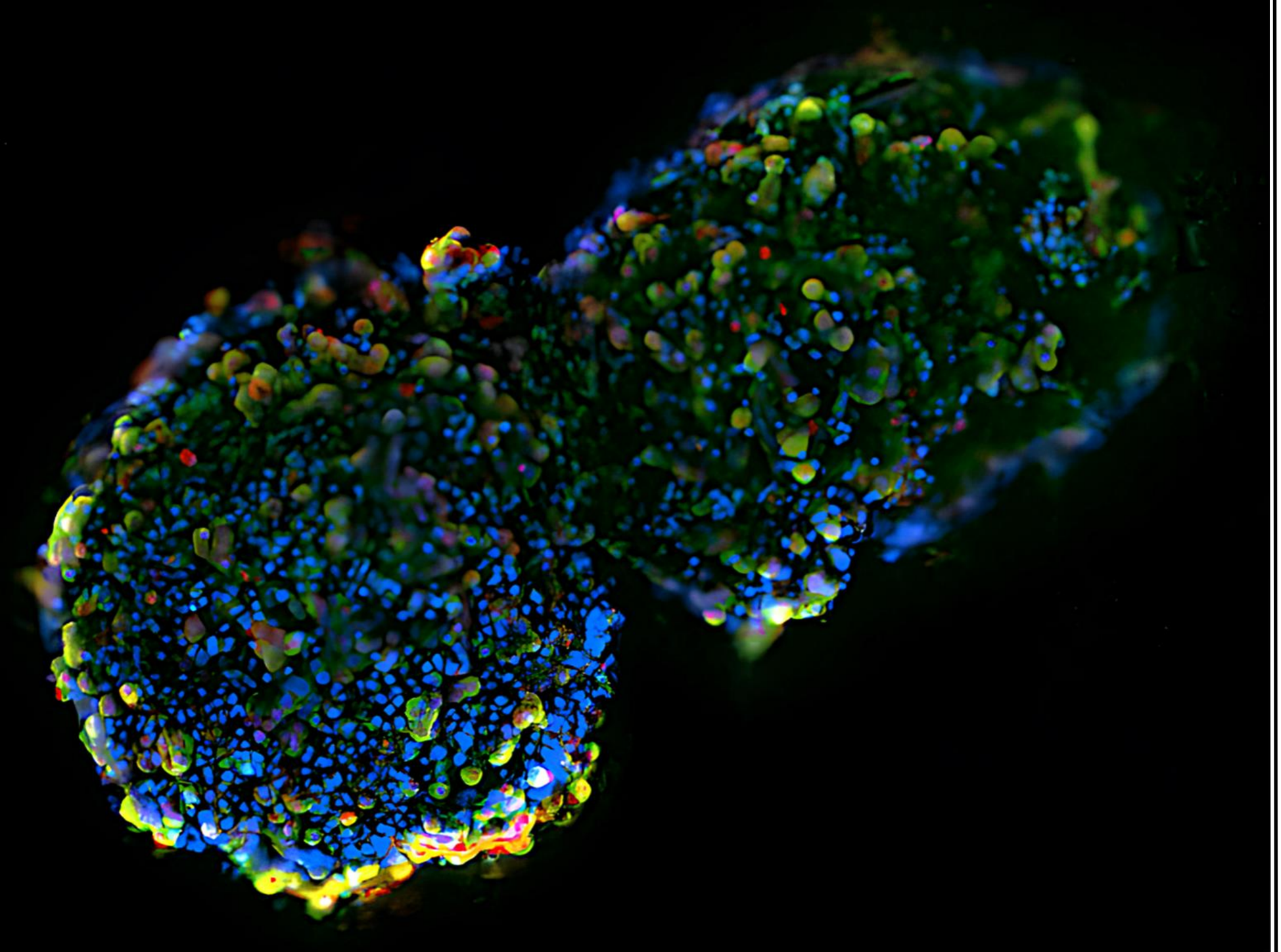


Linde Sevenants

Chemical and Physical Health Risks - Sciensano (Brussels), Belgium

“Copper wings: a nanoscopic butterfly”

Captured at 88,000x magnification, copper oxide particles form a delicate butterfly-like structure—one hundred thousand times smaller than a real copper butterfly (*Lycaena* sp.)—showcasing the beauty of nanoscale architecture through HAADF-STEM imaging.



[1]Blaž Režonja, [2]Martina Štampar, [1]Špela Rozman

[1]Biotechnical Faculty, University of Ljubljana, Slovenia
[2]National Institute of Biology, Slovenia

“A Toxic Nebula”

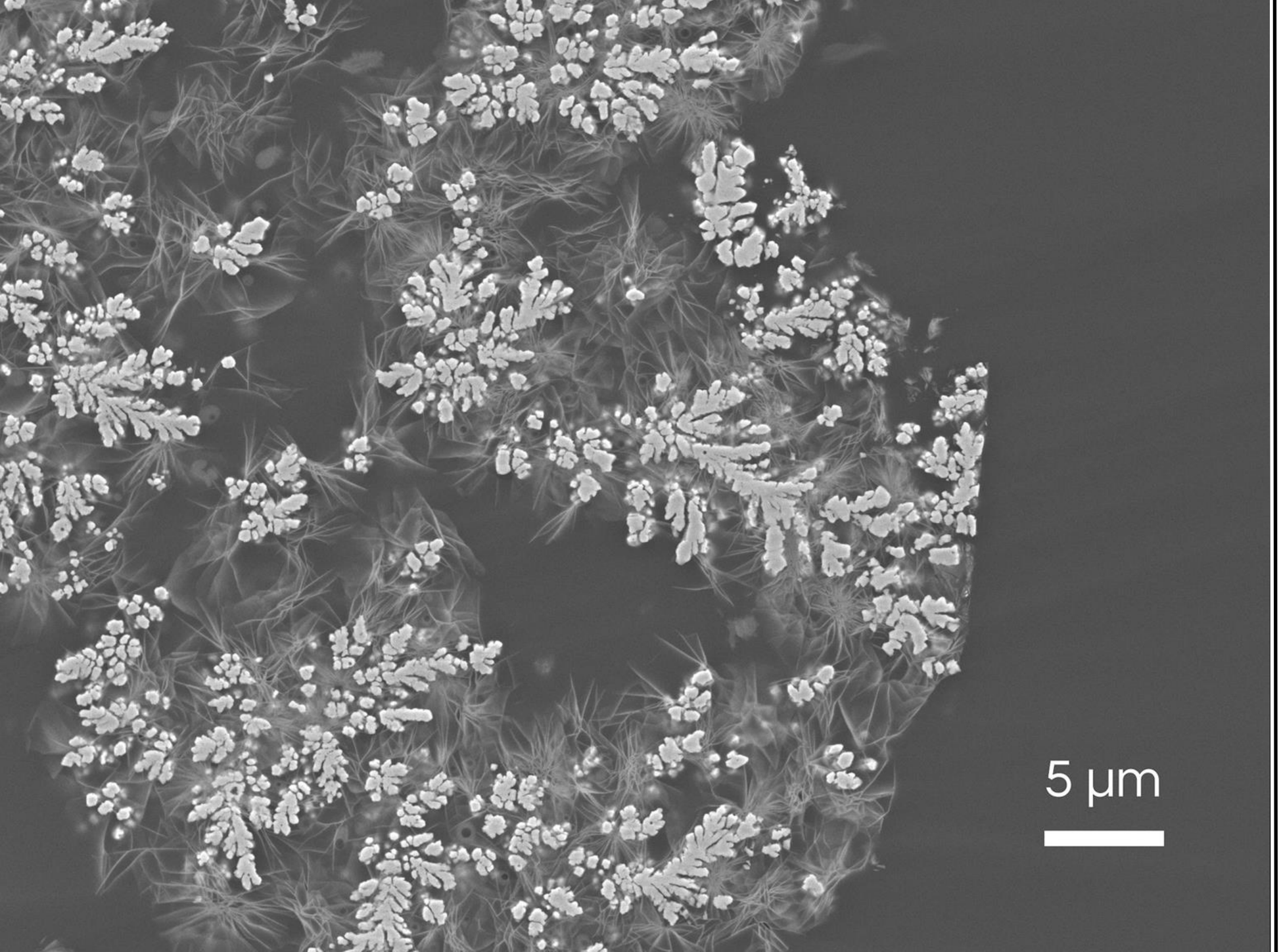
Whole-mount staining of two touching HepG2 liver cell spheroids after exposure to a genotoxic compound. Imaged as a Z-stack automatically with widefield fluorescence in a multimode microplate reader. Nuclei in blue, with biomarkers of single-strand (green) and double-strand (red) breaks.

Marko Radenković, Elizaveta Pavlova, Sara Joksović

BioSense Institute, University of Novi Sad, Serbia, Serbia

“PbSe Heart”

The heart symbolizes love and life but this one is made of a poisonous PbSe grains. Created through physical (thermal) vapor deposition.

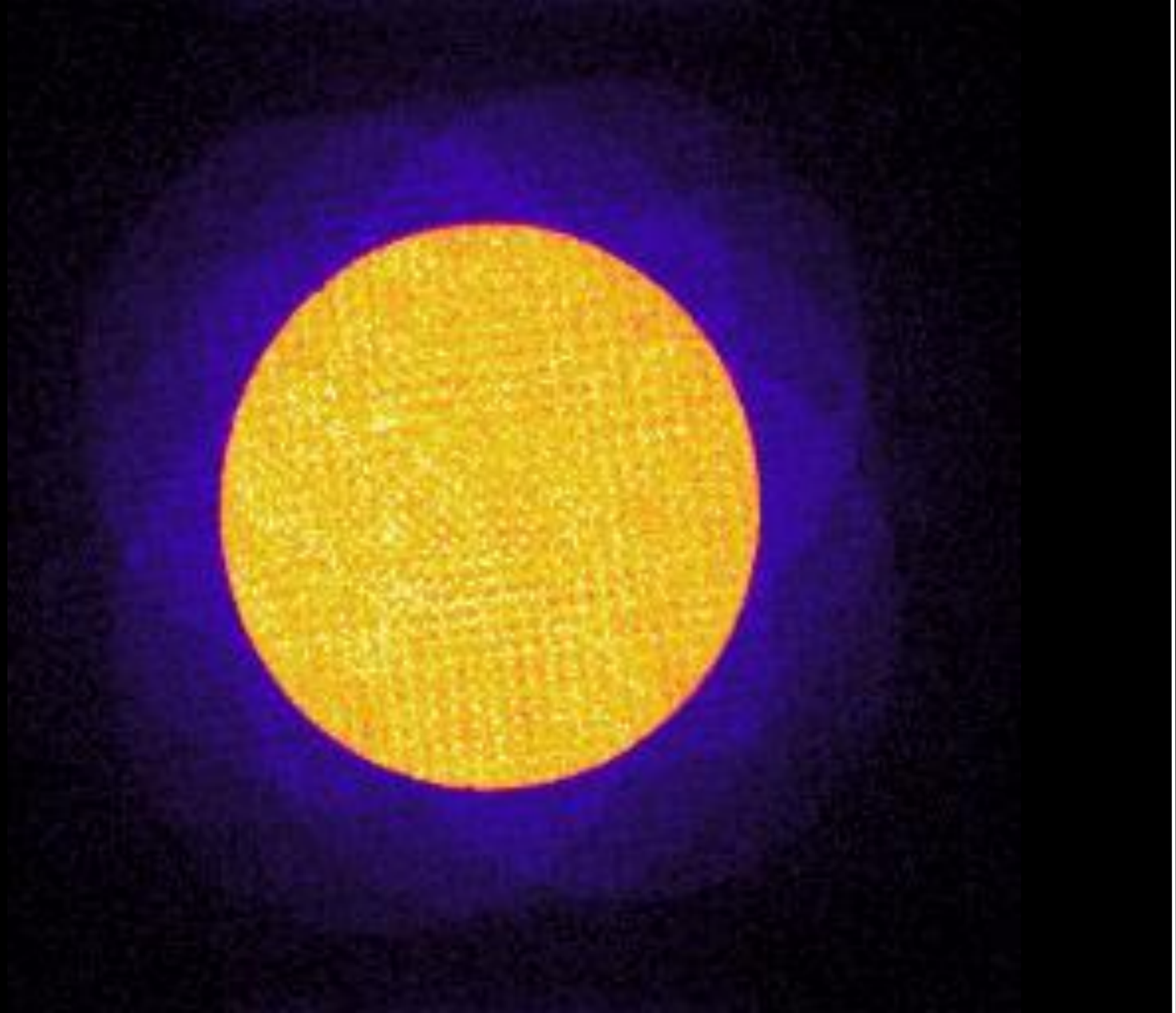


Daria Jardas Babić

University of Rijeka, Croatia

“Copper frost”

A cross-section of anodized copper, reminiscent of branches covered in frost. These fine structures illustrate the complexity of copper oxidation. The sample was prepared with a cross-section polisher.

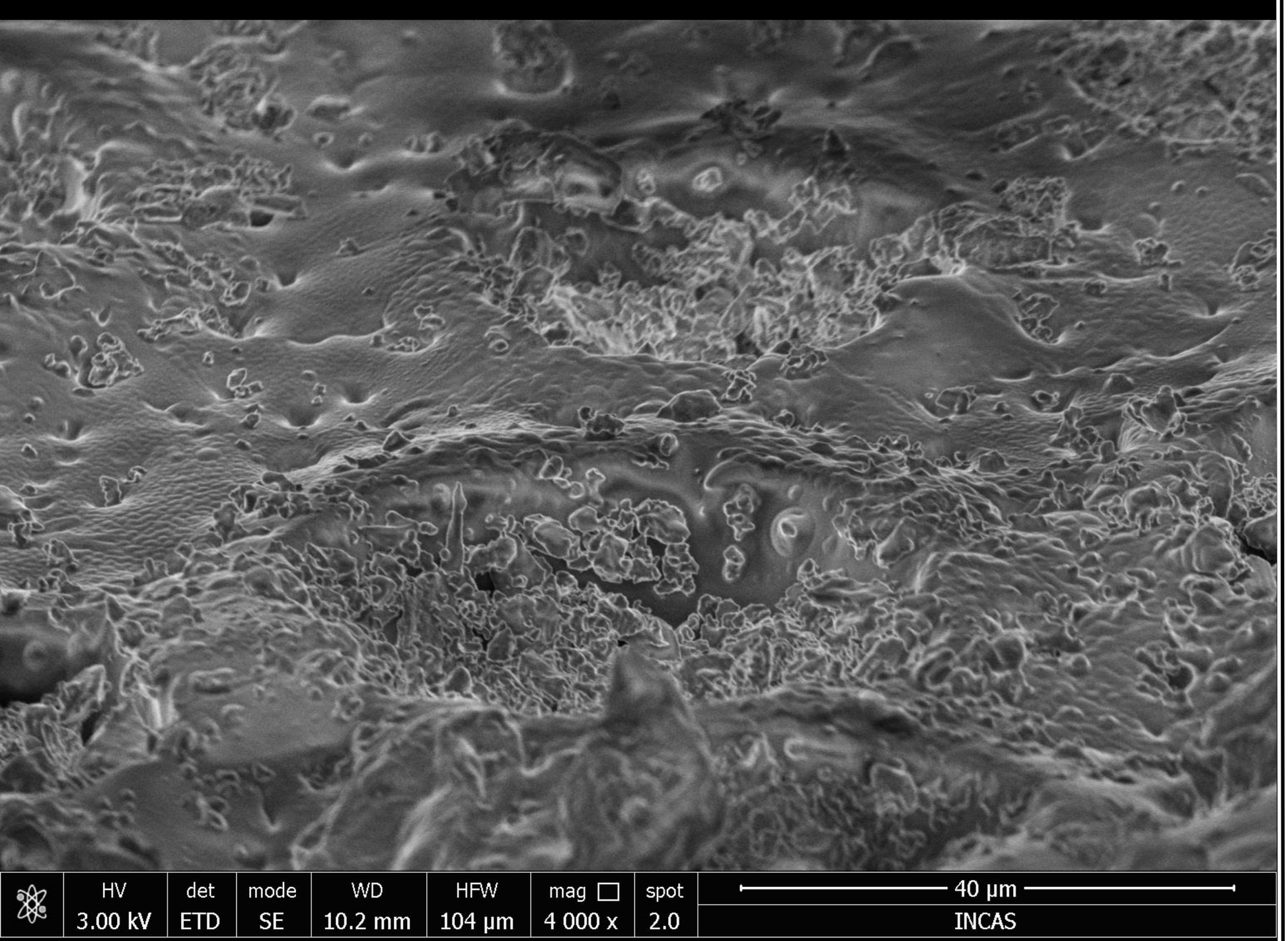


Elena Unterleutner

Graz University of Technology, Austria

“PACBED Flower of STO”

Position averaged convergent beam electron diffraction (PACBED) is a common technique in scanning transmission electron microscopy to determine the thickness of a crystalline sample. The colored PACBED pattern shown here corresponds to $SrTiO_3$ (STO) (100) with a crystalline thickness of ~ 6 nm.

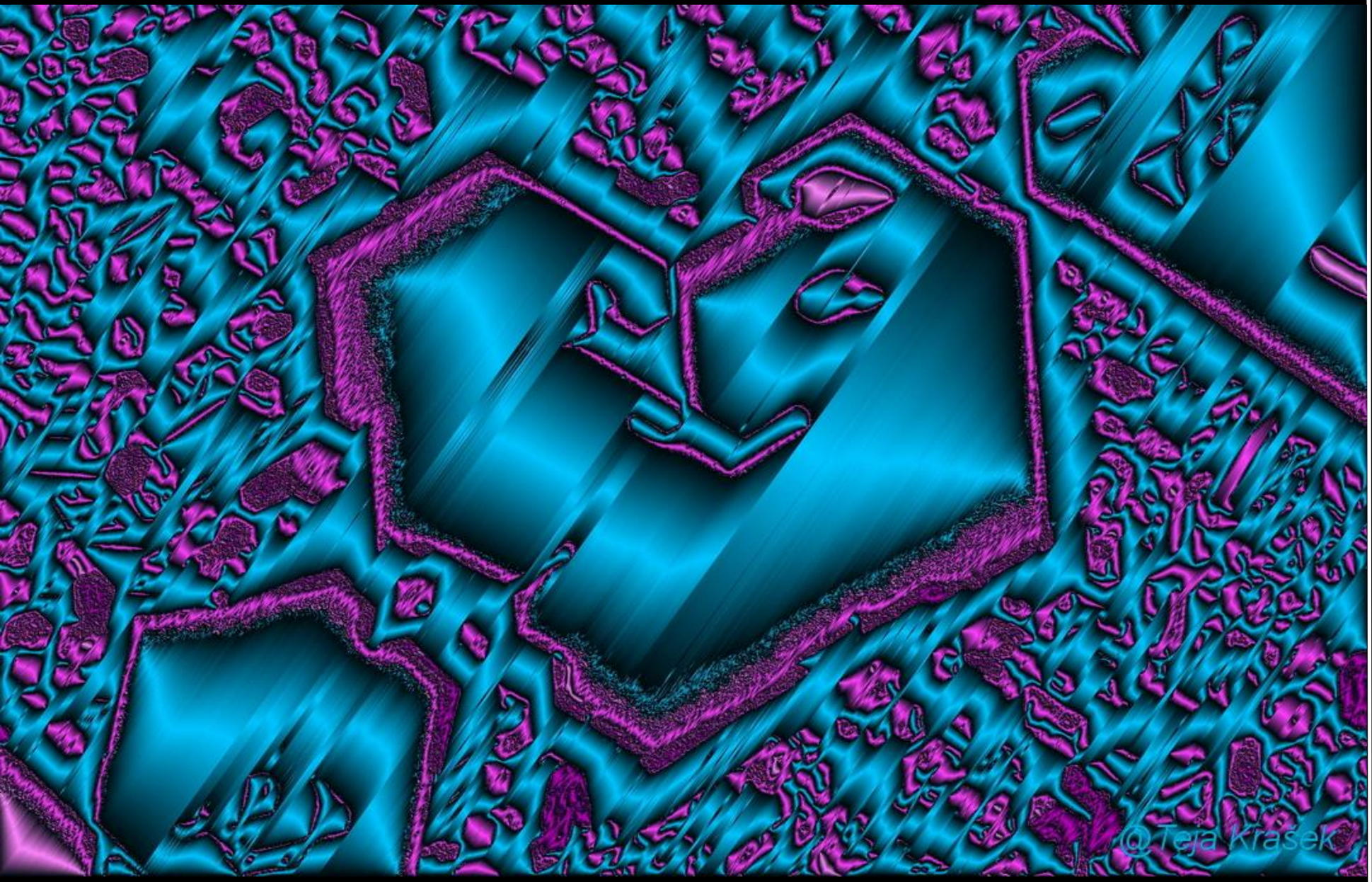


Alina Dragomirescu, Adriana Stefan

National Institute for Aerospace Research "Elie Carafoli" - INCAS, Romania

“Mini craters”

Sponge material looking like moon surface

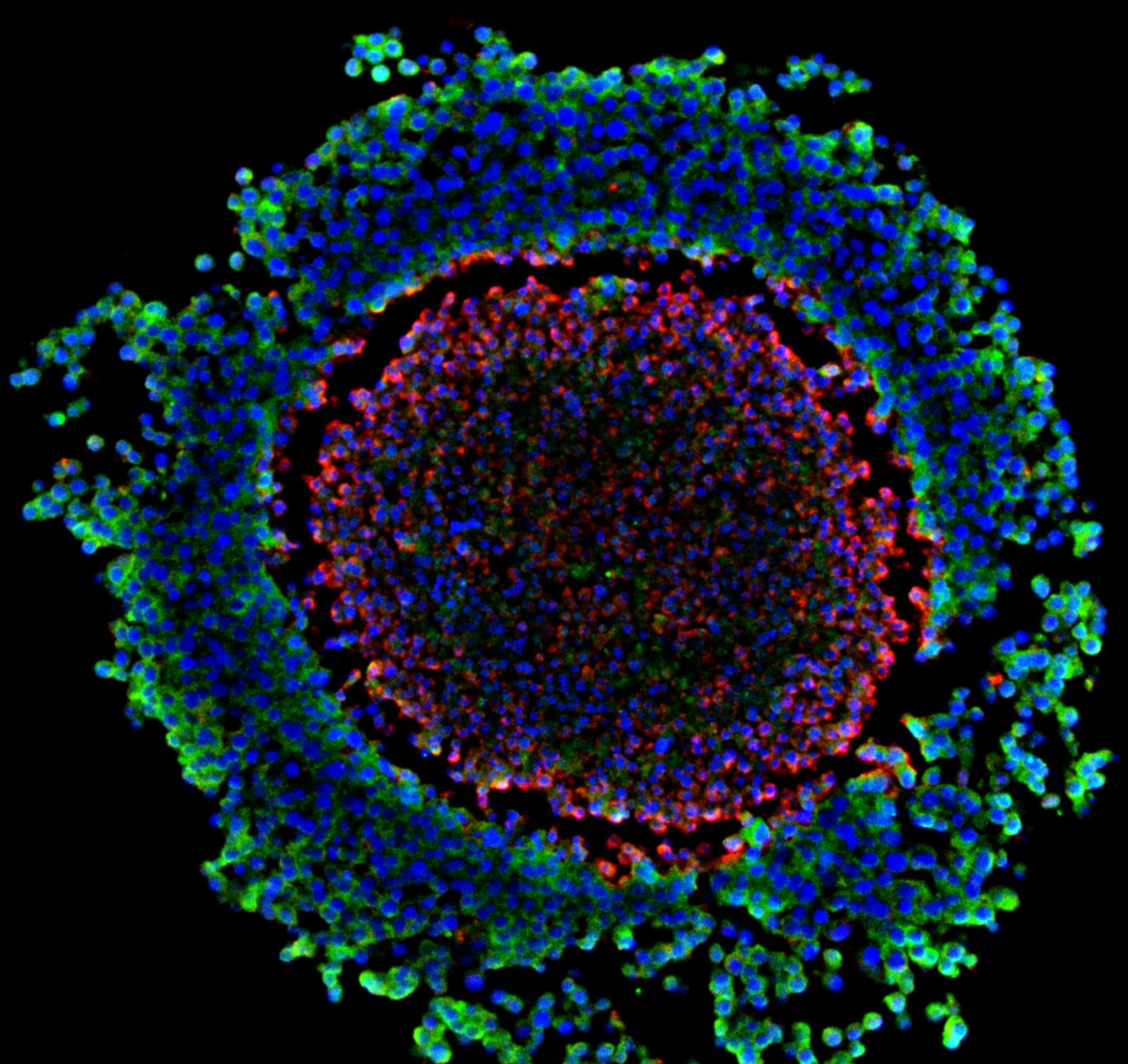


Andreja Jelen[1], Teja Krašek[2]

[1]Jožef Stefan Institute, Slovenia
[2]Freelance artist

“Heart symbol TiZrHfSnFe HEA”

Decorated BS SEM image of the partially superconducting TiZrHfSnFe high-entropy alloy (HEA), exhibiting the shape of a heart.
It is a multi-phase mixture of intermetallic compounds, with some phases more and others less topologically and chemically disordered.

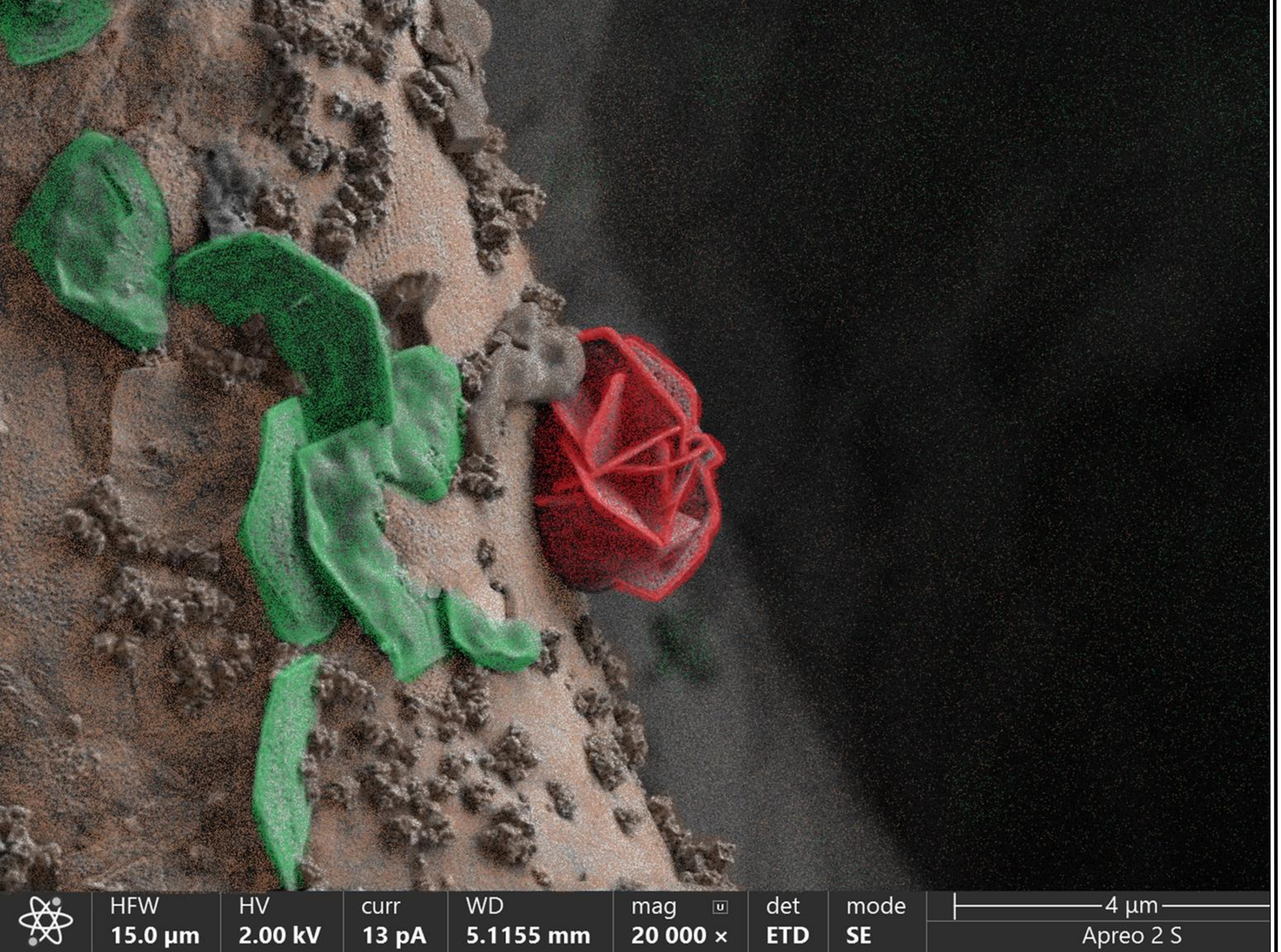


[1]Blaž Režonja, [2]Martina Štampar, [1]Špela Rozman

[1]Biotechnical Faculty, University of Ljubljana, Slovenia
[2]National Institute of Biology, Slovenia

“Spheroid Solar Corona”

An FFPE section of a HepG2 liver cell spheroid exposed to a genotoxic compound. Imaged automatically with widefield fluorescence in a multimode microplate reader. Nuclei in blue, with biomarkers of DNA-damage-induced cell cycle arrest (red) and DNA adducts due to oxidative stress (green).

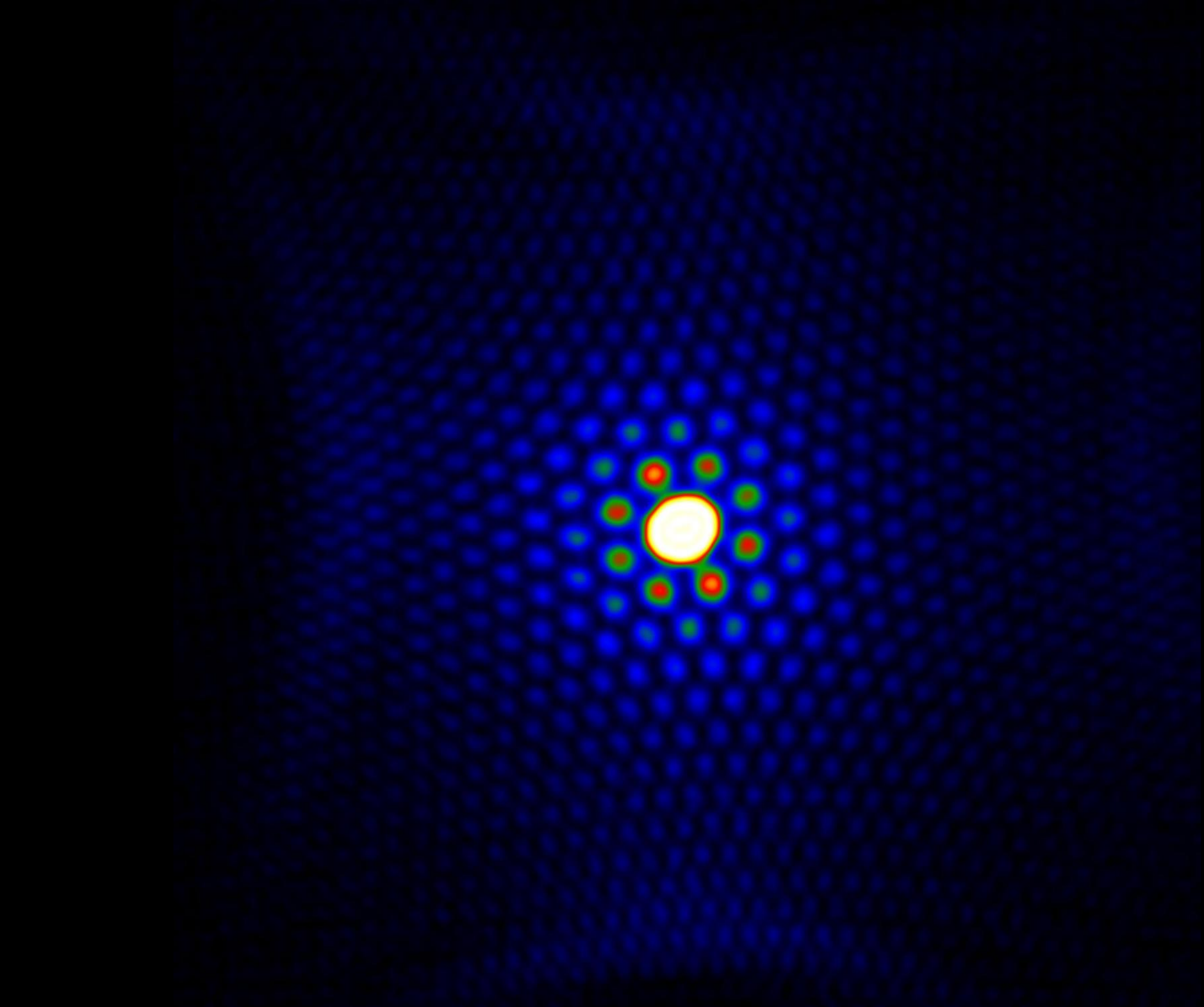


Mitja Kostelec[1,2]

[1]Department of Materials Chemistry, National Institute of Chemistry, Ljubljana, Slovenia
[2]University of Nova Gorica, Slovenia

“Perched Rose on the Trunk”

SEM of a rose-like iron-oxide rosette perched on a textured nickel “trunk.” Grayscale image recoloured in an EDS-inspired palette.



Vincenzo Grillo, Paolo Rosi, Lorenzo Viani

Cnr-NANO Modena, Italy

“Array of beam”

Using a MEMS based on 4 spiral phase plate (based on electrodes) we create in a TEM an array of beams. The interference, in appropriate bias conditions, maintains the 4-fold symmetry. The beam can be used to resonantly excite crystal bloch waves or explore specific crystal frequencies.