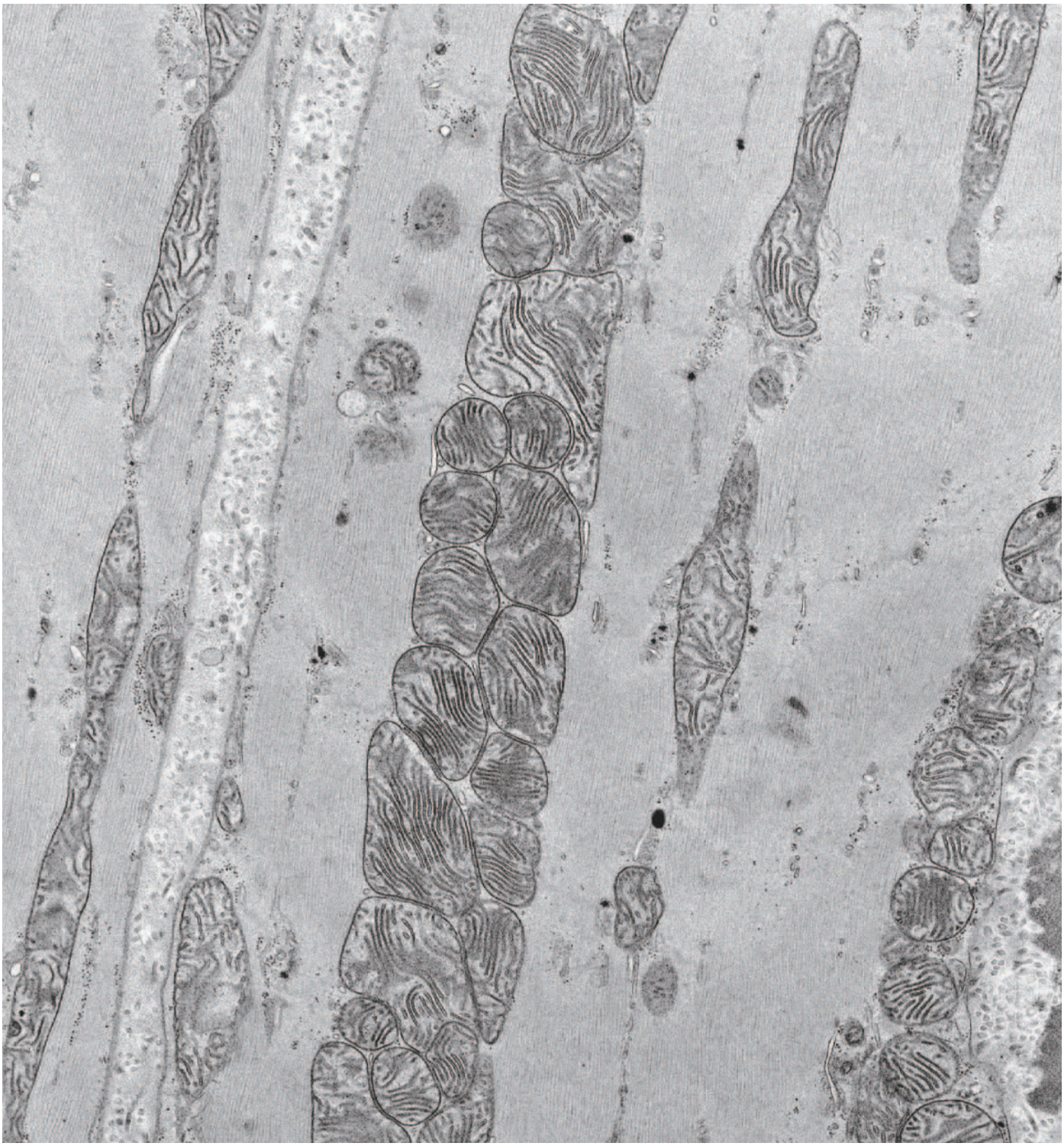
DiATOME

ultra

Highest quality diamonds and optimal crystal orientation guarantee perfect ultrathin sections and a durable edge

Section pick-up is facilitated as the boat is horizontal allowing the water to completely fill the boat all the way round

A hydrophilic surface makes it easy to wet the cutting edge, even with a low water level



Your benefits of working with Diatome

Free customer service
Sectioning tests with biological and material research specimens of all kinds.

We send you the sections along with the surfaced sample, a report on the results obtained and a recommendation of a suitable knife.

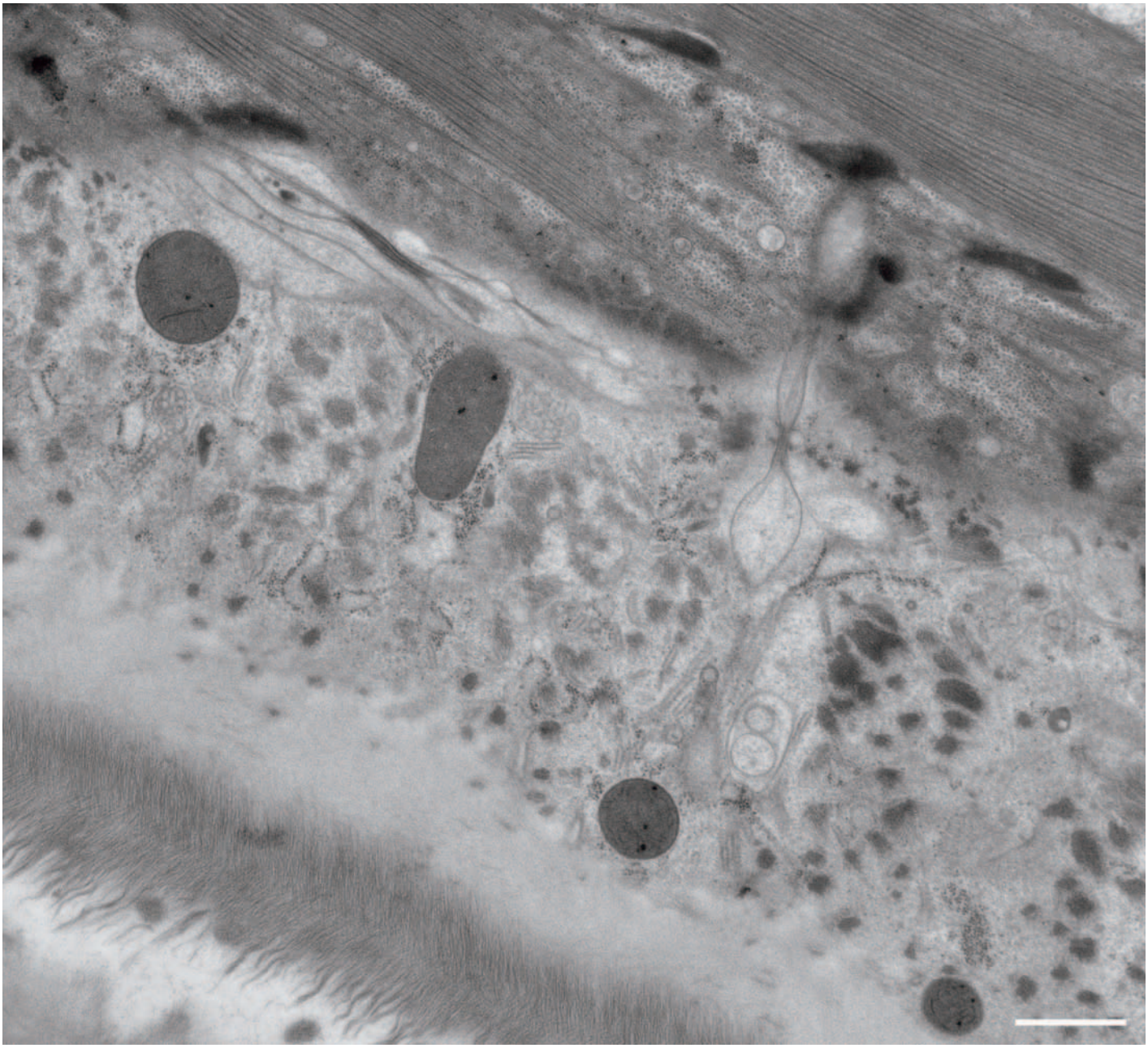
Complete discretion when working with proprietary samples.

Re-sharpening and reworking service
A re-sharpened Diatome diamond knife demonstrates the same high quality as a new knife.

Even knives purchased in previous years can continue to be re-sharpened.

All knives can be reworked into another type of knife for no extra charge, e.g. ultra to cryo or 45° to 35°.

Exchange service
Whenever you exchange a knife we offer you a new Diatome knife at an advantageous price.



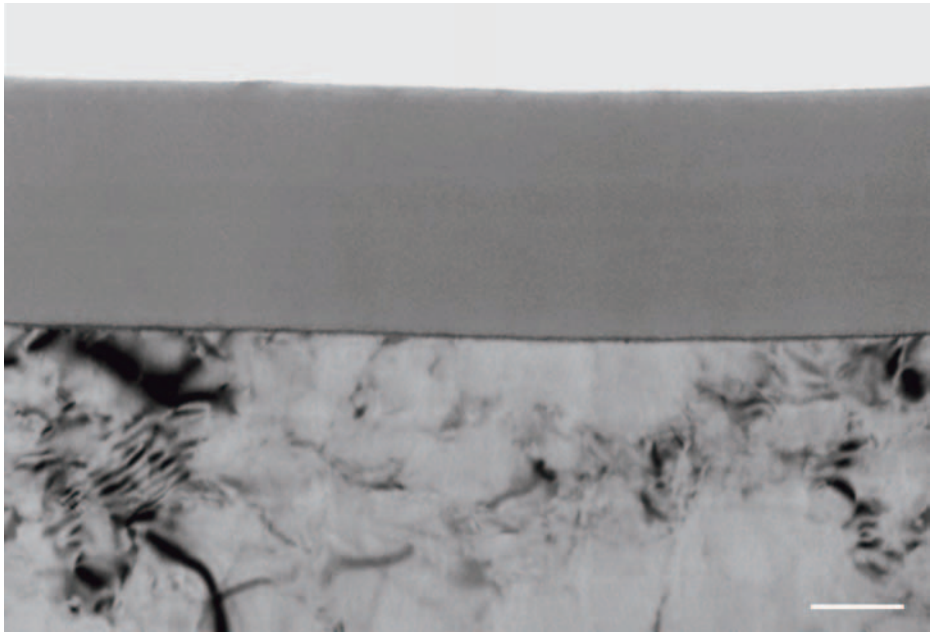
ultra 35°
ultra 45°

ultra 35°
In 1989 J. C. Jésior (Ref. Jésior) demonstrated considerably reduced compression, smoother section surfaces and improved structural preservation thanks to the use of our ultra 35° knives.

In the meantime, a large number of scientists have recognized the advantages of 35° knives, in particular for sectioning Lowicryls and non-homogenous specimens, as well as non-decalcified bone, dental materials, etc.

The ultra 35° knives are perfect for sectioning relatively soft materials research specimens including metals and polymers, as well as hard specimens such as semiconductors, superconducting oxides, catalysts, nano-crystalline ceramics, etc (Refs. Mahon, Glanvill, Swab, Quintana, Maniette, Schubert-Bischoff).

The ultra 35° knife has demonstrated it's usefulness as a standard knife for the majority of applications in both biological and materials research.



The ultra 35° knife (in the triangular holder) with a cutting range of 100nm - 2µm is used for dry sectioning of epoxy or acrylic resin embedded biological samples, which need to be investigated by element analysis (Ref. Edelmann) and SIMS (Ref. Guerquin-Kern). The gliding of the sections on the dry knife surface is facilitated with the use of our Static Line II ionizer.

ultra 45°
Acknowledged as the appropriate knife angle for routine sectioning of both biological and material research specimens, it represents a balanced compromise between section quality and durability.

▶
▲
EM micrograph of an ultramicrotomed section of the anodic alumina film formed on Al-2 wt%Cu alloy. Scale bar = 100nm.
Xiarong Zhou, School of Materials, University of Manchester.

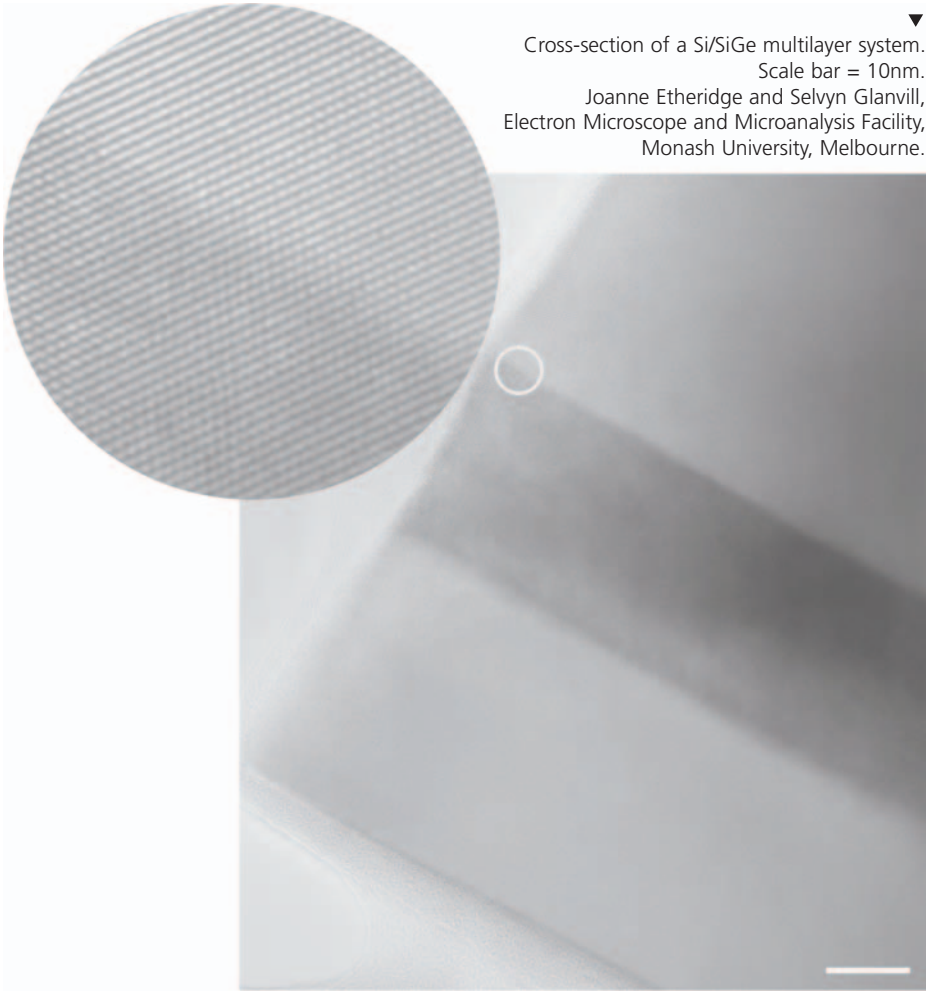
◀
Ultrastructure of the roundworm Caenorhabditis elegans. Scale bar = 1µm.
Thomas Müller-Reichert, EM Technology Development, MPI Dresden, and Kent McDonald, Electron Microscopy Laboratory, University of California, Berkley.

◀◀
Rat muscle (Quadriceps) x 23'000
Werner Graber, Anatomisches Institut, Bern.

Specifications

ultra 35°	
Cutting ranges:	30 - 200nm (standard biological applications) 10 - 30nm (Electron Spectroscopic Imaging ESI, 3D reconstruction, etc) 50nm - 1µm (alternating ultra-thin/semi-thin sectioning) 100nm - 2µm (dry sections for element analysis and SIMS)
Available sizes:	1.5mm, 2.0mm, 2.5mm, 3.0mm, 3.5mm, 4.0mm

ultra 45°	
Cutting range:	30nm - 200nm
Available sizes:	1.5mm, 2.0mm, 2.5mm. 3.0mm, 3.5mm, 4.0mm



▼
Cross-section of a Si/SiGe multilayer system.
Scale bar = 10nm.
Joanne Etheridge and Selvyn Glanvill,
Electron Microscope and Microanalysis Facility,
Monash University, Melbourne.

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