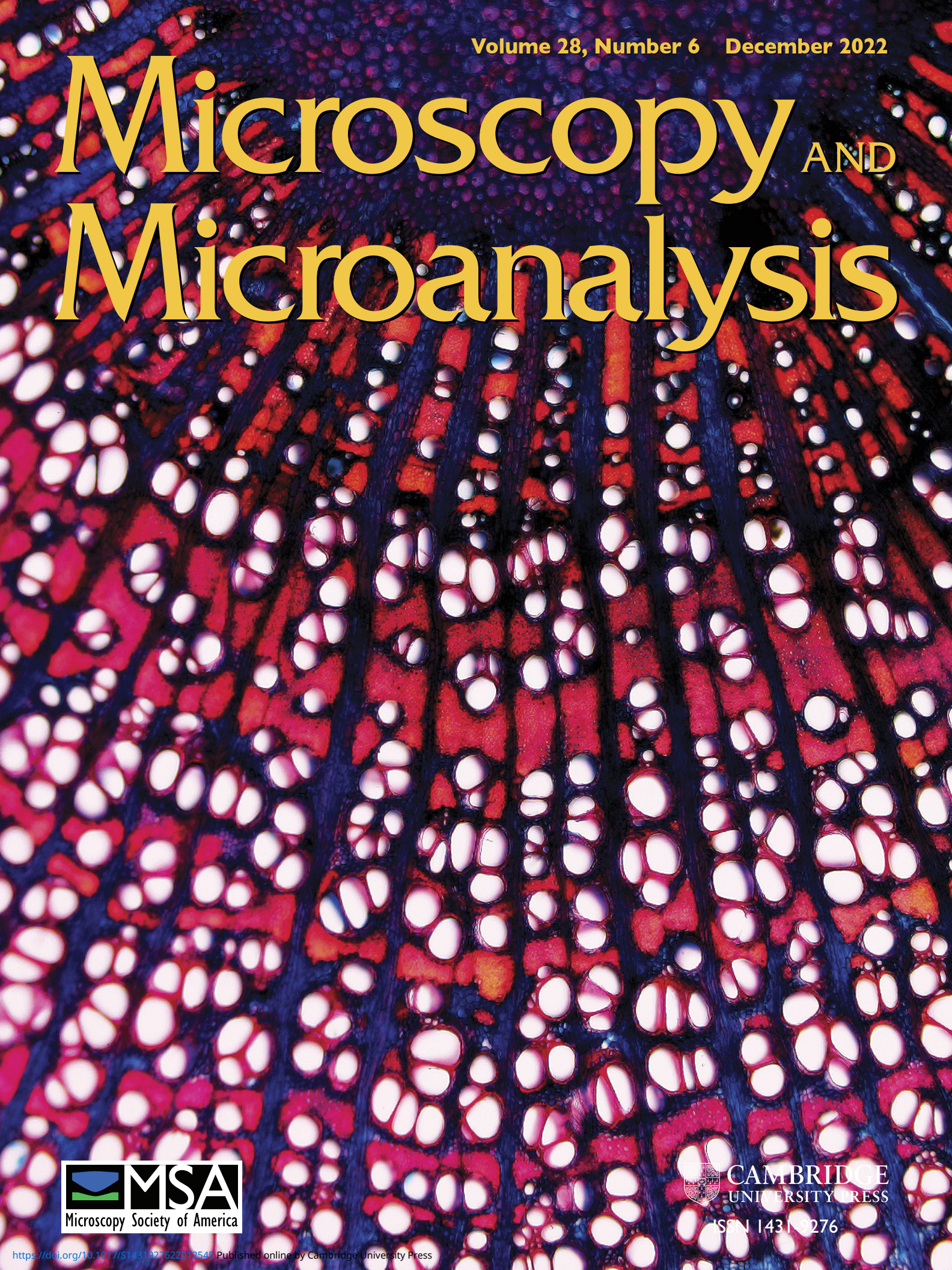
Volume 28, Number 6 December 2022

Microscopy AND Microanalysis



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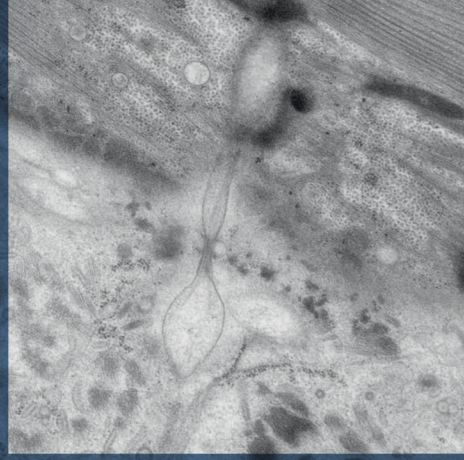
ultra 35°

Perfect for sectioning relatively soft materials research specimens including metals and polymers, as well as mixed specimens such as polymers filled with nanoparticles, brittle materials such as catalysts, crystals, semiconductors, etc. The ultra 35° knife has demonstrated its usefulness as a standard knife for a majority of applications in both biological and materials research.



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

ultra-semi 35°

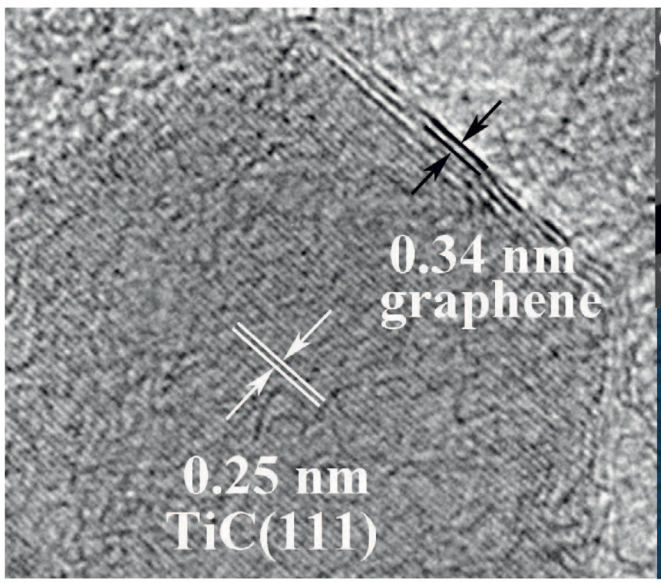
Similar to our ultra 35° 3.0 mm with a greater thickness range (50-200nm). Ideal for alternating sectioning from ultrathin to semithin.

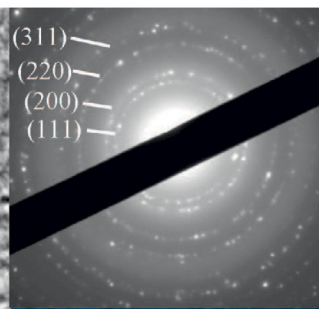
ultra 45°

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

ultra 35° (dry)

The ultra 35° knife (in the triangular holder) with a thickness range of 30-200nm 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.





HRTEM image of a TiC microsphere showing nanocrystalline carbon coating on the TiC grai n (confirmed by the electron diffration pattern).
J. Zhong et al, Journal of the European Ceramic Society 32, pp. 3407 – 3414, 2012.

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Microscopy AND Microanalysis

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Microscopy and Microanalysis publishes original research papers dealing with a broad range of topics in microscopy and microanalysis. These include articles describing new techniques or instrumentation and their applications, as well as papers in which established methods of microscopy or microanalysis are applied to important problems in the fields of biology or materials science. Microscopy and microanalysis are defined here in a broad sense, and include all current and developing approaches to the imaging and analysis of microstructure. The criteria for acceptance of manuscripts are the originality and significance of the research, the quality of the microscopy or microanalysis involved, and the interest for our readership.

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On the Cover: Light microscopy image of Glycyrrhiza inflata rhizome, one of the source materials of the botanical licorice root. The image depicts a part of the secondary wood and pith in a transverse section obtained by free-hand sectioning of the dried and softened rhizome using a razor. The tissue was double-stained in astra blue and basic fuchsin and imaged using an Olympus BX53 microscope with a DP74 camera system. The image is part of the illustrations in "Application of Microscopy in the Quality Control of Licorice Roots: Comparative Anatomy of the Roots and Rhizomes of Five Species of Glycyrrhiza" by Vijayasankar Raman et al., page 2150.

Biological Applications

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