Diamonds with the 480 nm Absorption Band, the Morphology of Macle Diamonds, and Russian White Nephrite's Distinctive "Orange Peel" Texture

Recently I had the privilege to attend Converge—a unique event uniting GIA's research and education with our sister organization the American Gem Society's professional development opportunities—and see firsthand there's a real appetite for well-curated, relevant gemological information. People packed into talks focused on gemstone treatments, field gemology, colored diamonds, diamond origin, and more. If you're a subscriber or online reader of *Gems & Gemology*, you'll know these are all topics we cover regularly, and our Fall 2025 issue is no exception!

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Our lead article by GIA's Dr. Mei Yan Lai offers a perspective on natural diamonds with a broad absorption band centered at 480 nm in the visible spectrum. This category deserves more attention as it includes rare and sought-after pure orange and color-change chameleon diamonds. Dr. Lai summarizes the properties of these unique gems.

The flattened triangular shapes of diamond macles are some of the natural world's most recognizable crystals. In our next article, Drs. Ahmadjan Abduriyim and Masao Kitamura examine the morphology, internal structure, and growth mechanisms of natural macle diamonds using scanning electron microscopy and cathodoluminescence imaging.

In our final paper, three researchers from China—Drs. Meiyu Shih, Guanghai Shi, and Biqian Xing—deliver a study on the potentially diagnostic "orange peel" surface microstructure of white nephrite from Russia, which is similar to that seen in jadeite jade. This texture results from nephrite replacing carbonate grains to produce a distinctive pattern supporting a Russian geographic origin determination.

There's truly something for everyone in our regular features. *Lab Notes* draws on reports from GIA's global labs, including an extraordinary large bicolor natural rough diamond, a dumortierite crystal with color zoning reminiscent of watermelon tourmaline, and a quench-crackled and dyed laboratory-grown sapphire resembling Paraíba tourmaline.

As always, *Micro-World* illuminates the inner beauty of gemstones. Some of the intriguing contributions this time include a UFO-shaped feather in a yellow diamond, a remarkable play-of-color pattern resembling a turtle shell in Ethiopian opal, and a rare almandine-pyrope garnet crystal in a diamond octahedron from South Africa.

Our *Gem News International* section highlights interesting studies from all over the globe, such as two Burmese amber specimens containing fungal inclusions, three blue quartz spheres colored by elbaite, and a low-temperature heat treatment study of natural corundum analyzing the behavior of the 3161 cm^{-1} infrared band.

We come full circle with *Diamond Reflections*, which showcases highly unusual and interesting crystal morphologies from a unique collection of rough diamonds. They demonstrate that Earth's natural processes have the power to sculpt the hardest mineral into remarkable shapes that can resemble animals or familiar objects. These distorted crystals offer a window into our dynamic planet's turbulent interior.

Thank you for being a subscriber or online reader of *G&G*. Welcome to our Fall issue!

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