

Baw Mar Sapphire, China's Freshwater Pearl Industry, Glass-Ceramic Imitation Gemstones, and Red and Orange Spinel from Myanmar and Vietnam



Welcome to our Summer 2026 issue! Dip into our feature articles, covering a variety of gem materials from East and Southeast Asia as well as glass-ceramic gem imitations. We also introduce readers to a brand-new column on field gemology.

In our first paper, a team of researchers led by Arkar Moe Myint report on blue sapphires from Baw Mar, Myanmar, highlighting their color, clarity, and unique internal features. The authors use a combination of laser ablation-inductively coupled plasma-mass spectrometry and uranium-lead dating of a zircon inclusion to estimate that the sapphires formed in a magmatic environment 54 to 65 million years ago.

“A new column, From the Field,...brings a recent Vietnam expedition to vivid life...”

Next, Dr. Qishen Zhou and colleagues contribute a sustainability study of freshwater pearl culturing in China. Although the world's leader in freshwater pearl culture, much of China's pearl industry has historically generated low profits. Environmental regulations initially posed challenges for producers but also encouraged sustainable practices and better quality, which the authors indicate might present new business opportunities for the industry.

GIA's Dr. Wasura Soonthorntantikul and coauthors present a paper on glass-ceramics—manufactured materials that closely mimic the color and appearance of natural gemstones. The team provides an identification guide, using refractive index, distinct chemistry, and unique infrared and luminescence features that remain consistent across a wide variety of gem imitations.

In our final article, Boonyapak Aksorn and fellow researchers examine red and orange spinel from Myanmar and Vietnam, finding that the gems share similar basic properties but differ in chemical makeup. While trace elements can help identify origin, the authors note that distinguishing some orange spinels remains challenging.

A new column, *From the Field*, offers a firsthand look at GIA's field gemology expeditions, where geologists connect with local mining communities to better understand the gemstones, their origins, the people behind their production, and their journey to market. During these expeditions, the team gathers samples for GIA's reference collection to support origin determination and other studies. In this installment, the column brings a recent Vietnam expedition to vivid life through dramatic photographs, short videos, and captions documenting the local mining and trading scene.

Our regular sections offer a variety of noteworthy content as well. Interesting gem materials featured in *Lab Notes* include a natural diamond carved to resemble a panther's face, an enormous cultured pearl measuring more than 40 millimeters, and a heated red spinel submitted as a ruby. Some of the wonders revealed in this iteration of *Micro-World* are “fungal hyphae” in a mabe pearl, colorful mosaic patterns and “shooting stars” in sapphire, and distinctive fluorescent inclusions in spinel. Our *Gem News International* section documents rare Chinese freshwater cultured pearl colors, a six-rayed star quartz, and more.

We hope you enjoy this issue's content!

A handwritten signature in black ink, reading 'Duncan Pay'.

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