

# Gem-A News

A round-up of the latest news from Gem-A



*Gem-A hand-held diffraction grating spectroscope. Image by Henry Mesa.*

## GEMMOLOGICAL INSTRUMENTS

**Samantha Lloyd FGA EG, Gem-A Instruments manager, outlines her must-have for all gemmologists this season... the spectroscope.**

**E**ver wondered what the difference is between seeing a spectrum with a prism spectroscope and a diffraction spectroscope?

Absorption within coloured gemstones can be an essential clue to their identity, particularly when testing set gems that cannot be identified by other means of instrumentation. But what happens when you do not see the spectrum you had hoped to see?

Most gemmologists will use a diffraction grating spectroscope as

their go-to; beautifully compact tools with a high intensity of diffracted light, which split the light at a perfectly equal distance for each wavelength. These spectroscopes can normally provide you with the answers you need for most coloured gems.

But let us say you are looking for the spectroscope to help you decide whether you have a ruby or a red spinel, where the main difference in the spectrum is those little lines in the blue for ruby, and you cannot see those little lines in the blue...

This is where a prism spectroscope eases that challenge of finding very small dark absorption lines within the very small dark blue end of the spectrum. Due to the way the prism naturally disperses the light, blue wavelengths of higher energy are spread further through a prism, giving you a much wider area of blue to work with and making absorption in the blue that much easier to spot.

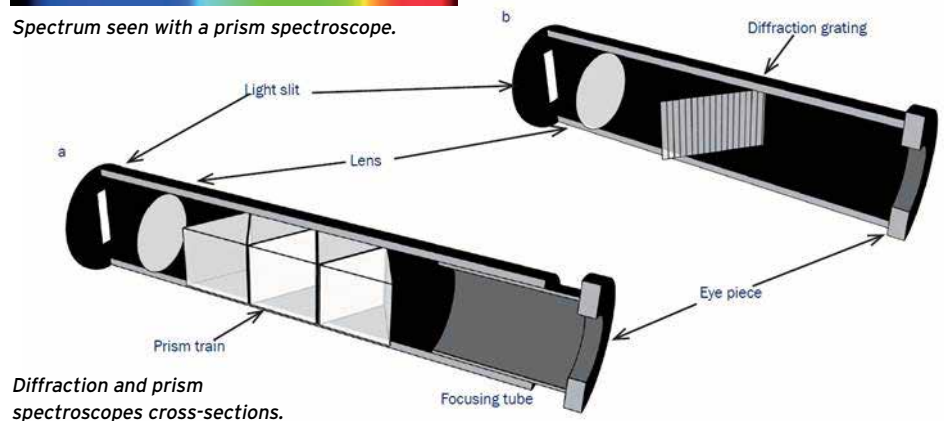
Gem-A Instruments stocks a range of spectroscopes and spectroscopy reference books. See the Gem-A Instruments catalogue online or email [instruments@gem-a.com](mailto:instruments@gem-a.com) for further information. ■



*Spectrum seen with a diffraction grating spectroscope.*



*Spectrum seen with a prism spectroscope.*



*Diffraction and prism spectroscopes cross-sections.*