

CIBJO  
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SPECIAL REPORT  
COLOURED STONE COMMISSION



**Demand for coloured gemstones is high in post-COVID market, but challenged by undetected and undisclosed treatments**

By Charles Abouchar, President  
CIBJO Coloured Stone Commission

After three years of pandemic-related disruption, the CIBJO Congress is finally returning to its normal annual, in-person format. For those of us in the coloured stone world, we have seen significant changes occurring during the challenging period since we last sat down together.

The coloured stone sector is currently experiencing a shortage of supply, and that has resulted in significant price increases. It is due to several factors, including:

- The COVID crisis, which had an impact on mining production, which only now is returning to pre-pandemic levels.
- Issues in Madagascar and Tanzania with export licenses, which have significantly

reduced the flow of rough being exported to processing centres.

- The booming Chinese market that is spending to catch-up on the lost time when it was in prolonged lockdowns and isolation, and this during a period in which supply is limited.
- The major jewellery brands that have seen sales boom, putting greater pressure on a market with limited supplies.

The confluence of poor supply and high demand seems set to be a major market influence over the coming year. Such problems may be small in terms of overall global trade, but they are very significant for gemstone dealers and consequently for the jewellery markets.

### **Challenges in detecting treatments**

The coloured stone market also faces challenges that are unrelated to supply chain issues. These frequently involve new treatments, some of which are actually old treatments that today are used in large numbers and, unfortunately, are not always detectable. In some cases they are



*Charles Abouchar, President of the CIBJO Coloured Stone Commission.*



*Emmanuel Piat, Vice President of the CIBJO Coloured Stone Commission.*



*Nilam Alawdeen, Vice President of the CIBJO Coloured Stone Commission.*



*Piles of corundum, before heating (left) and after heating (right).*

not even tested for by gemstone laboratories.

The days when savvy individuals working in darkened corners of heating facilities could enhance the visual appearance of stones simply by mixing chemicals and introducing them into their furnaces or kilns are long gone. Today such activities are the domain of larger players, who have installed state of the art treatment facilities, and hired PhD graduates from various scientific disciplines to carry out the research needed.

Unfortunately, these new players do not always inform the gemmological and/or scientific worlds of their progress. It then falls upon those of us who are active in the market to try to be on the lookout for goods that may have been subject to new treatments, or improved older ones. We then need to communicate our gut feelings and sometimes supply partial information to gem testing laboratories, so that they may begin the search for solutions by which such treated stones can be detected.

The challenge of recognising low temperature heating in rubies and most probably other corundums has been well researched by gemmologists, and solutions for the identification of such stones have

been published by several laboratories. This has resulted in many gem labs now being able to detect and report on such treatments.

But there are still significant issues regarding the low-temperature treatment of corundums. There are laboratories that do not have the required instrumentation to detect the treatments, and, even when they do testing protocols, methods vary between laboratories.



*Heated orange sapphire revealing two characteristic disc-like atoll structures extending from fine fluid tubes. Photo: M.S. Krzemnicki, SSEF*

It may be, with the technological capacity and scientific knowledge sometimes varying considerably between gem labs, the time has come for the trade to ask for more explanatory information to be included on reports, to substantiate the results given.



Left: Untreated light blue topaz (natural colour) and right: irradiated blue topaz (treated colour).  
Photo: SSEF

### Irradiation of corundum

The irradiation of the stones to alter their appearance has been known about and reported upon for more than a century, and today many gems are being irradiated before coming to the market.

The most well known example is irradiated topaz. At one point this treatment even triggered the attention of the FDA in the United States, since some goods were found to have residual radioactivity. This resulted in the imposition of strict import control parameters.

Today these irradiated stones are for the most part correctly labelled when sold. But stones like tourmalines, morganites, kunzites and others are frequently sold without any indication of their treatments.

Since the irradiation of such stones cannot be detected with the known gemmological instruments and tests, proper disclosure depends heavily on the honesty of the dealers who carry out the treatments to inform their buyers, which

unfortunately, in most cases, is not done.

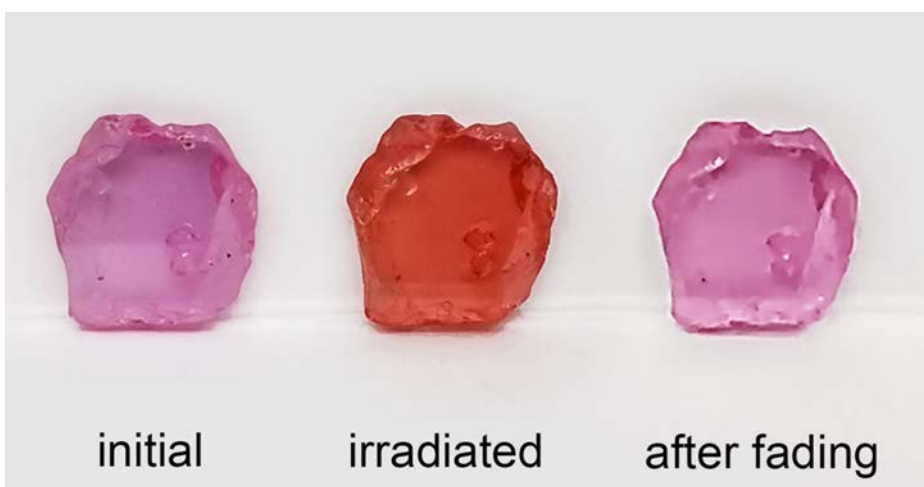
In 2019 rumours began circulating that in Sri Lanka there were people using medical equipment to irradiate corundum. With information gleaned from various sources, we now know that the treatments were being carried out for a considerable period of time prior to there being any word about them on the street.

Modern gemmological publications about the irradiation of corundum date the practice back to the 1970s, when it became apparent that a yellow colour could be induced by a variety of types of irradiation. The use of this treatment seems to have increased considerably since the turn of the current century.

Irradiation does not seem to have a significant effect on the colour in some corundum, and to a large extent the change induced by the treatment is not stable, with the stones eventually returning to their original colour. But this induced colour instability may vary between stones.

The major trading issue with this treatment is that laboratories have not found a method of detecting that it has occurred, apart from, that is, by applying colour stability testing, which in itself does not confirm that a corundum has been irradiated, only whether the colour appearance is stable or not.

A concerning element of this irradiation treatment process for corundum is that it appears that research has been carried out at universities, and that these academic bodies have



A pink sapphire untreated (left), and irradiated before (centre) and after fading (right). Photo SSEF

then offered commercial services to the market. Traders who have taken up the offer have not taken any steps to declare the treatment or try to stop this practice.

So, the situation today is, that we cannot be sure about the quantity of irradiated corundum in the marketplace. The reality is that such stones may be described as “natural” on an identification report, without any indication of a possible treatment that it has undergone.

### **Oiling becomes a mainstream practice**

Another treatment issue concerns the oiling of almost all gemstones with fissures or fractures. Whereas oiling once was associated almost exclusively with emeralds, it is today a common practice with all gemstone types, among them spinel, paraiba tourmaline, tanzanite, ruby and sapphire, to mention just a few.

Unfortunately, while most laboratories may discover oiling in these stones and the LMHC in its information sheet #12 has set out the nomenclature that can be used to describe such treatments, it appears that they are not always reported.

We hope that this will change in near future. Only the full disclosure of such treatment may reduce this unfair practice.

### **Clear guidelines for disclosure**

In general, most gemstone dealers work to protect the integrity of the industry and are aware of all updates to the CIBJO Blue Books. Keeping the supply chain well informed and updated, will help both manufacturers and retailers sell gemstones with confidence.

The Coloured Stones Commission recently amended the CIBJO Coloured Stones Blue Book and the latest version can be downloaded at no cost from the CIBJO website at <https://www.cibjo.org/industry-standard-intro/>.

The Coloured Stone Commission has clarified that all gemstone treatments be disclosed to to the customer.

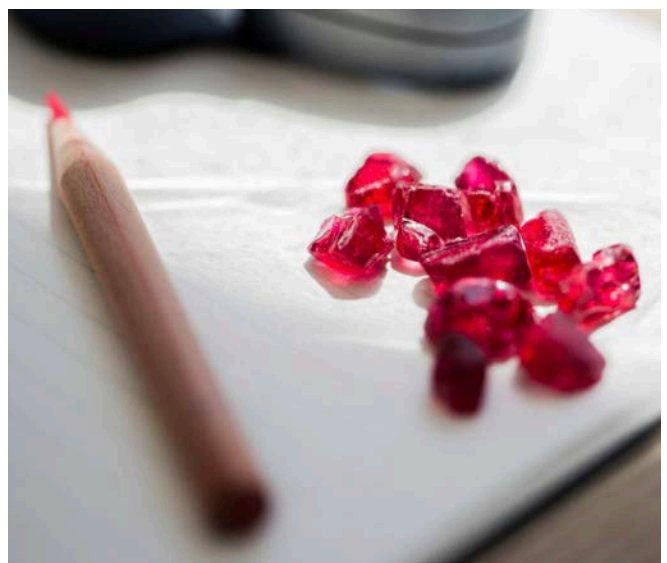
Clause 4.2.5.1 “Informing the Customer” states: *“It is in the best interest and responsibility of the trade for consumers to be fully informed with*



*Burmese ruby with oil in fissure. Photo: M.S. Krzemnicki, SSEF*

*regards to any treatments applied to gemstones. Treatments may impact a gemstone value, and are often not permanent or may require special care; the seller shall therefore inform the purchaser about the treatment and any special care requirements.”*

Further clauses prior to and following this emphasise the high degree of trading transparency needed in the market today. The new edition of the Coloured Stone Blue Book also includes a helpful chart that describes various treatments and how they should be described, as well as the “trade codes” that can be used within the trade only and not with the consumer.



*Photo: © 2023 Gemfields Limited*

CODE	TYPE OF TREATMENT	DESCRIPTION
<b>W</b>	<b>Surface Waxing:</b> Gemstones treated on the surface or just below the surface with a colourless agent such as wax and/or oil that acts or serves the same purpose as wax.	<b>Waxed</b>
<b>O</b>	<b>Fissure-Filling with Oil:</b> Gemstones that have fissures or very narrow openings filled with colourless to near-colourless agents such as oil.	<b>Fissure filled with oil</b>
<b>RES</b>	<b>Fissure-Filling with Resin or Other Polymers</b> Gemstones that have fissures or very narrow openings filled with colourless to near-colourless agents such as resin, polymer or any similar substances, other than glass.	<b>Fissure filled with resin</b>
<b>F</b>	<b>Filling of Fissures, Fractures and/or Cavities with Glass and Other Solidified Substances:</b> Gemstones treated by the filling of open fissures, fractures and or cavities with substances such as glass, plastic or similar substances.	<b>Fracture-filled or glass-filled</b>
<b>H</b>	<b>Heating:</b> Gemstones treated by a thermal process in a furnace, kiln or other heating apparatus.	<b>Heated</b>
<b>HP</b>	<b>Heat with Pressure:</b> Gemstones treated by the use of heat with pressure to effect desired alterations of colour, clarity.	<b>Heated with pressure</b>
<b>FAH</b>	<b>Flux-Assisted Healing:</b> Any corundum that shows indications of having undergone heat treatment, and a degree of healing along previous fractures, that contain residues such as glass from the heating process.	<b>Heated in flux</b>
<b>B</b>	<b>Bleaching:</b> Gemstones treated by bleaching to remove or alter a colour by means of chemical or physical agents or light.	<b>Bleached</b>
<b>R</b>	<b>Artificial Irradiation:</b> Gemstones treated to change their colour by artificial irradiation.	<b>Artificially irradiated</b>
<b>U</b>	<b>Diffusion Treatment:</b> Gemstones with a colour treated and/or an optical phenomenon created, by diffusion of chemical elements from an external source, with the exception of hydrogen and oxygen.	<b>Diffusion treated</b>
<b>D</b>	<b>Dyeing:</b> Gemstones with a colour altered by dyes or other colouring agents or stones darkened by the "sugar/acid" process.	<b>Dyed</b>
<b>I</b>	<b>Impregnating:</b> Gemstones treated by impregnation with plastic or similar substances. This clause does not include the bonding of powdered materials, which are artificial products.	<b>Impregnated</b>
<b>C</b>	<b>Coating:</b> Gemstones treated by coating with a layer of a substance spread over the surface, or part of the surface, such as lacquering, enamelling, inking or foiling for protection, colouration or deception.	<b>Coated</b>

### A tribute to Roland and Harry

CIBJO is an organisation with with a strong appreciation for history and legacy, in many respects because it is on their basis that our standards and common sets of nomenclature have been painstakingly built over the years. Each of our Blue Books is a testament to the men and women that have worked on them,



*Roland Naftule, 1937-2023.*

with every generation building on the efforts and insight of those that preceded it, with every sentence, word and sometimes punctuation mark being discussed and debated.

But like all great works of collective wisdom, the footprints of a select few are evident throughout, and the contributions they make will live on well on into the future, enriching the understanding, knowledge and sense of integrity of new members of our profession.

Two such individuals died in 2023, after devoting decades of hard work to the industry, and to CIBJO in particular – Roland Naftule and Harry Levy.

One of best known coloured gemstone traders and manufacturers in the United States, Roland was also one of the American sector's most prominent leaders, being a founding organiser of the American Gem Trade Association (AGTA), and serving as its President from 1983 through 1985. He also was Chairman of AGTA's Industry Rules Committee for 12 years, and for two years



*Harry Levy, 1939-2023.*

served on the Board of Governors of the AGTA Gemological Testing Center. He also served on the GIA Board of Governors.

In 1984, Roland was a founding organiser of the International Coloured Stone Association (ICA), first serving as Chairman of its organizing committee and then as its Founding President from 1985 through 1989.

In 1989 he was the founding organiser and first Chairman of the Gemstone Industry & Laboratory Conference (GILC), which is dedicated to harmonising terminology provided on reports by leading gemmological laboratories.

In CIBJO he was a long-time Vice President.



*Photo: © 2023 Gemfields Limited*

He also served as Vice President of the Coloured Stone Commission, and later oversaw all the work we did as President of CIBJO's Sector A, which is responsible for all gem materials, where he scrutinized every addition and amendment to our Blue Book.

Harry was an English gentleman, soft spoken and unfailingly polite, and an intellectual who understood gemstones in their many varieties – splitting his time between coloured stones and diamonds. Also a gemstone dealer, based in London, he served alternately as President and Vice President of the Coloured Stone Commission, and also was a member of the Gemmological Commission, and for 10 years was President of the Diamond Commission, and later its Vice President.

Outside of CIBJO, at different times Harry served as President of the International Diamond

Council, President of the London Diamond Bourse, President of Gem-A, the Gemmological Association of Great Britain, and President of the British Jewellers Association.

He also was Chairman of the Working Group that oversaw in 2015 the acceptance of the first gemstone standard accepted by the International Organisation for Standardisation (ISO). Called International Standard 18323, and entitled "Jewellery – Consumer confidence in the diamond industry," it delineates terms for natural diamonds, synthetic diamonds and diamond simulants that can be unambiguously understood by consumers.

Roland and Harry were friends of many of us, and, while they no longer are here in person, their legacies will live on in the Blue Books. Of this I am sure they would be proud.



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