

## Undisclosed submissions of CVD synthetics to grading laboratories

DTC Research Centre has been notified of three recent instances of undisclosed submission of CVD synthetics to grading laboratories in Belgium, India and China. In each case the synthetics had very similar characteristics and may therefore have had a common source. They were readily identified by the gemmological laboratories involved (IGI and NGTC) but members of the trade should take note of the particular characteristics of the CVD synthetics and of the need to be particularly vigilant.

- The CVD synthetics were near-colourless (F - J colour.)
- Sizes ranged from 0.3 ct to 0.6 ct but the majority have been 0.5 ct - 0.6 ct.
- They were type IIa and were referred to as such by DiamondSure.
- When tested using DiamondPLus all the synthetics gave a "refer CVD?" result.
- When viewed in DiamondView they showed bluish green fluorescence and blue phosphorescence, with characteristic striations.
- The synthetics showed moderately strong photoluminescence from H3 and nitrogen-vacancy optical centres (zero-phonon lines at 503 nm and 575/637 nm respectively).
- They also exhibited photoluminescence at 737 nm that is attributed to silicon-vacancy centres.

The DiamondView and photoluminescence results indicate that the CVD synthetics have been heat-treated post synthesis and we note that the combination of characteristics listed above is strikingly similar to that reported by the GIA [Wang & Moses 2011] for 16 CVD synthetics received from Gemesis Corporation.

Members of the trade should be aware of the key role that proper disclosure of products plays in maintaining consumer confidence. Trading in misrepresented or undisclosed products, whether inadvertently or not, could cause irreparable damage to reputation. Furthermore, such irresponsible practices could undermine the integrity of the diamond supply chain, damaging both trade and consumer confidence in buying diamonds. Key grading laboratories have the ability to detect synthetics and these recent events emphasise the importance of having access to methods for detecting synthetics and only buying from sources that can be trusted. Parcels of stones containing unusually high proportions of type IIa should be treated with particular caution.

Wang W. & Moses T. M., Gem Quality CVD Synthetic Diamonds from Gemesis, Fall 2011 Gems & Gemology, pp.227-228.  
<http://www.gia.edu/research-resources/gems-gemology/issues/fall2011-contents/fall-2011-featured-lab-note.html>