



Gemmological  
Research  
Industries Inc.



## DAY 1: Colourless Diamonds

### Identifying of Natural, Treated and Synthetic Diamonds with Standard and Advanced Instruments

Instructor: **Branko Deljanin**, B.Sc., GG, DGA, FGA, DUG,  
*Gemmological Research Industries Inc, Canada*

*June 6th, 2020 (Saturday) at EGM, 460 rue Sainte Catherine Ouest, suite 913, Montréal*

#### 9am-12.30pm: IDENTIFICATION of NATURAL and SYNTHETIC DIAMONDS

- **Types of diamonds** based on nitrogen and boron content
- **Colourless Natural diamonds**: sources, characteristics and identification
- **Methods of growing** HPHT and CVD diamonds
- **Inclusions** in Natural and Synthetic diamonds
- **UV lamp** – reaction of different types of diamonds under LW and SW UV light (“PL inspector”)
- **CPF (Cross Polarized Filters) method** and instrumentation to screen and ID diamond’s origin

**PRACTICAL WORKSHOP: Samples of Ia, IIa, IIb, Ib diamonds (natural synthetic origin)** are tested with microscopes, mini UV lamp (“PL inspector”) and Mini Polariscope with Portable light

#### 1.30-5.00pm: SCREENING for TREATMENTS of NATURAL and SYNTHETIC DIAMONDS

- **Clarity and Color Enhancements - unstable** (Fracture Filling and coating),
- **Clarity Enhancements - stable** (Traditional Lasering, KM Laser drilling)
- **Testing and screening methods for treated diamonds** with standard instruments
- **Post treatments of CVD-grown** colorless diamonds (HPHT)
- **ID of HPHT-enhanced diamonds** using advanced instruments
- **ID of mounted synthetic diamonds** with EXA instrument and screening instruments
- Problems and solution in identification of **melee natural and synthetic diamonds**

**PRACTICAL WORKSHOP: Colorless Diamonds** are tested with microscopes, mini UV lamps, CPF (portable polariscopes) and portable spectrometer (**EXA**) for natural, treated or synthetic origin

- **Portable “Synthetic Diamond ID Kit”** (polariscope, lights, PL inspector), **EXA** will be available
- **Certificate of completion** will be issued to all participants

**Cost: CDN\$500** (US \$390)

**CDN\$450** (US \$350) if taken with 2<sup>nd</sup> day on “Coloured Diamonds”, total **CDN\$900** (US \$700)



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## DAY 2: Coloured Diamonds

### Identifying of Natural, Treated and Synthetic Diamonds with Standard and Advanced Instruments

Instructor: **Branko Deljanin**, B.Sc., GG, DGA, FGA, DUG,  
*Gemmological Research Industries Inc, Canada*

*June 7th, 2020 (Sunday) at EGM, 460 rue Sainte Catherine Ouest, suite 913, Montréal*

9am-12.30pm: **IDENTIFICATION of NATURAL and SYNTHETIC DIAMONDS**

- **BROWN diamonds:** sources/producers, characteristics and identification
- **YELLOW and ORANGE diamonds:** sources/producers, characteristics, and identification
- **GREEN and CHAMELEON diamonds:** source/producers, characteristics and identification
- **BLUE diamonds:** sources/producers, characteristics and identification
- **PINK/RED diamonds:** sources/producers, characteristics and identification
- **Use of Synthetic Diamond ID Kit** to separate Colored Natural and Synthetic Diamonds

PRACTICAL WORKSHOP: **Microscopy** –inclusions for HPHT and CVD synthetics, **UV lamp** – colours of fluorescence/phosphorescence and **Cross Polarized Filters** (CPF) patterns for synthetic origin.

1.30-5.00pm: **IDENTIFICATION of TREATED NATURAL and SYNTHETIC DIAMONDS**

- **Clarity and Color Enhancements - unstable** (Fracture Filling and coating),
- **Clarity Enhancements - stable** (Traditional Lasering, KM Laser drilling)
- **Processes for colour treatments** of diamonds, natural and synthetic
- **Color Enhancements - stable** (irradiation, annealing, HPHT, multistep treatments)
- **Post treatments of HPHT-grown and CVD-grown diamonds** (irradiation)
- **Identification methods for treated diamonds** with advanced instruments at labs
- **Grading of Colored diamonds** with Munsell chips, masters using GIA and CGL-GRS system
- **Certification** of treated and synthetic diamonds at gem laboratories

PRACTICAL WORKSHOP: **Coloured Diamonds** are tested with microscopes, mini UV lamps, (PL inspectors), portable polariscopes, Jewellery Inspectors and portable spectrometer (**EXA**) for origin

- **Portable “Synthetic Diamond ID Kit”** (polariscope, lights, PL inspector), **EXA** will be available
- **Certificate of completion** will be issued to all participants

**Cost: CDN\$500** (US \$390)

**CDN\$450** (US \$350) if taken with 1st day on “Colourless Diamonds”, total **CDN\$900** (US \$700)