

Book Review

Diamonds: Natural, Treated & Laboratory-Grown, Advanced Education Series

Branko Deljanin, FGA

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There is a question that has lingered with me for the past few years, and I think everyone should dedicate time to think on it themselves. The question goes something like this; is it necessary for all professionals involved in the gem and jewelry industry to understand the science of diamond? Asked another way, if you are not directly involved with research and lab work, then should you still take it upon yourself to develop a firm understanding of the science of diamond even if you just focus on selling finished goods?

In the recent decade we have all come to understand that lab-grown diamonds have infiltrated the market and have become the most prominent they have ever been. I would imagine everyone is in agreement with me when I say that there is a growing concern to be sure that we all can properly identify natural from lab-grown diamond and any treatments they may have for the purposes of full disclosure to our clients and their protection. The responsibility to ensure full disclosure of a diamond's origin and treatments is one that I argue all professionals in our trade should fortify. This is where Branko Deljanin's *Diamonds: Natural, Treated & Laboratory-Grown Advanced Education Series* comes into play.

Of course, there is no one work of literature that can provide all the nitty-gritty details of the science of diamond. However, Deljanin offers a distillation of works from multiple gemologists and researchers who have dedicated much of their attention and passion to refining our understanding of the science of diamond. I keep saying the "science of diamond," so what does this mean exactly? There are more facets to the science of diamond than I can list off here, but some of them are as follows: understanding what diamond is fundamentally as a mineral, identification of a diamond's origin (i.e., natural or lab-grown) and treatments, how a diamond gets its color and what fluorescence means, and what trace elements and defects are.

This may sound like more information than the average jewelry professional needs to know, but this is exactly what I want to argue, and Deljanin's book is my support. Before we delve into this, however, Deljanin and the gemologists and researchers who took the time to compile a work of literature capable of delivering most, if not all, of the fundamentals of the science of diamond deserve due recognition for their collective achievement. Thank you to Branko Deljanin (researcher/instructor from CGL lab, Canada), Dr. Alan Collins (retired professor from Kings College, UK), Dr. Alexander Zaitsev (professor from University of New York, USA), Dr. Taijin Lu (research director of NGTC lab, China), Dr. Viktor Vins (treatment facility VELMAN, Russia), John Chapman (instrument maker GEMETRIX, Australia), and Dr. Thomas Hainschwang (researcher from GGTL lab, Switzerland/Liechtenstein).

Walkthrough

The book is organized in a cohesive format with all of its content digestible enough for even those who know nothing about the science of diamond to understand with little effort. In the introduction Deljanin speaks to the development of this book since 2008 by recognizing his research partner,

Dusan Simic, research gemologist and owner/CEO of Analytical Gemology & Jewelry, and how the pandemic affected this effort. From here we are guided through three sections: Background on Diamond Defects and Spectroscopy in Section I, Production of Laboratory-Grown and Treated Diamonds in Section II, and Instrumentation for Testing and Identification of Diamonds in Section III.

Furthermore, each section is broken up into smaller segments dedicated to specific topics regarding that section. Defects and optical spectroscopy of natural and lab-grown diamonds within Section I, status update of lab-grown diamond production and treatments within Section II, and a comparison of portable instruments for screening lab-grown diamonds along with the principles of advanced diamond testing instruments within Section III.

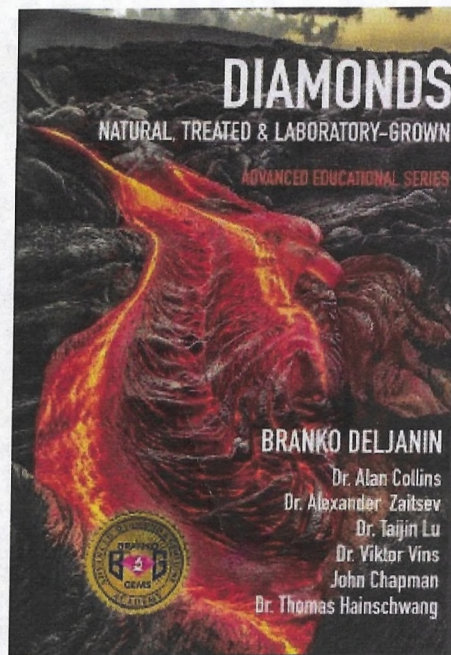
Deljanin and his co-authors take care of the reader by incorporating complimentary figures and illustrations, ensuring that each section's content is crystal clear. At no point in time did I personally feel lost or overwhelmed and, in fact, from cover to cover I was eager to turn the page. While I am no expert in the science of diamond, I can honestly say that most other books relating to the topic can feel overwhelming. This is not to speak negatively on those who write on the topic. This just speaks to the complexity of writing about the science of diamond.

At the end Deljanin gifts us with an appendix of case studies of diamond samples from the Canadian Gemological Laboratory and a glossary and abbreviations index. From start to finish you are guided through the fundamentals of our current understanding of the science of diamond. I would also be remiss if I did not mention the championing comments by Tom Chatham of Chatham Created Gems, Alberto Scarani of MAGILABS, Stuart Robertson of the GemGuide, and Dr. Peter M. P. Lanigan and Dr. Collins D. McGuinness of the DeBeers research team. These individuals really help you to further breed confidence in learning about the science of diamond.

Summary

Branko Deljanin's *Diamonds: Natural, Treated & Laboratory-Grown Advanced Education Series* caters to those new to the science of diamond and those who consider themselves veterans of the topic. It is both a beginner's guide and an advanced work of literature that has struck a brilliant balance between the need-to-know information on our current understanding of the science of diamond and maintaining its digestibility no matter your background. Returning to my earlier question, I am convinced and argue that ALL professionals involved in our trade should have a firm understanding of the science of diamond. Deljanin's book helps us all achieve exactly this.

Sharing from personal experience, nearly daily I encounter clients who have a misguided understanding of natural and lab-grown diamonds because of what they have read online. While it is a beautiful thing to have internet resources at your fingertips it is a double-edged sword because we all know the internet is not 100%



reliable. Combine this with sales professionals who may incorrectly explain the diamond they are attempting to sell to their already misled clients, and you get the propagation of even more misinformation. You can see the downward spiral from here. A firm understanding of the science of diamonds, in my opinion, clearly has a place on the sales floor because it directly impacts the actual and client-perceived values. The science of diamond no longer resides in the lab. We all have a duty to educate and inform as best we can. To reaffirm my stance, Deljanin's book steps up to this challenge and can mitigate uneasy situations like the one I listed earlier in this paragraph.

In a market where lab-grown diamonds and their treatments are becoming more pervasive and, in some cases, more difficult to detect by practical applications, I would strongly encourage you to do yourself the favor and invest in Branko Deljanin's *Diamonds: Natural, Treated & Laboratory-Grown Advanced Education Series*. If ever there is a time when you need to arm yourself with the necessary knowledge of diamond science, it is now.

Complimentary Book Resources

Laboratory-Grown Diamonds: Information Guide to HPHT-Grown and CVD-Grown Diamonds Third Edition by D. Simic and B. Deljanin \$49.95, Member Benefit \$40.00

Natural or Synthetic Diamond: Identifying with CPF, DF and UV Light by D. Simic \$35.00, Member Benefit \$28.00

Identifying Diamond Types and Synthetic Diamonds with CPF (Cross Polarizing Filters) Second Edition by D. Simic and B. Deljanin \$35.00, Member Benefit \$28.00

Fluorescence as a Tool for Diamond Origin Identification – a Guide by J. Chapman, B. Deljanin, G. Spyromilios (MGJ Conference 2017) \$35.00, Member Benefit \$28.00

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