

## HPHT PRESS FOR CHANGING A DIAMOND'S COLORS

13.11.14

Source: Israel Diamond Institute

The veteran gemologist Eli Dori opened up a laboratory that deals with changing a diamond's colors using high pressures and high temperatures with Alex Levetman. Naturally, before we report on the project, we mention the requirement of transparency for treated diamonds, over the entire value chain, from the manufacturer to the retailer. The World Federation of Diamond Bourses demands of gemological laboratories that it engrave this fact on a diamond's rondist and to clearly note it on the stone's certificate.

What brought us to the industrial area of south Netanya was the fact that there are those who mistakenly think that HPHT is only used to create synthetic diamonds, and this is untrue: changing color is the first step of the process. More than this, there's almost nothing as heartwarming as a professional creative collaboration between a deeply-rooted Israeli and a relatively new immigrant.

We arrived, and the random industrial building we found held a HPHT press, the only one in Israel that we know of. The press, which was imported directly to Netanya from Russia by Eli Dori and his partner Alex Levetman, was built in 1992, but that doesn't prevent it from fulfilling its duties as required.

The machine in front of us has a common appearance: a massive metal chamber equipped with a program which controls the pressure (900 atmospheres on the upper outer plate, 60,000 atmospheres inside when the press is closed) and temperature (up to 2000 degrees Celsius) with an electrical charge determined in advance during a scan



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*Eli Dori and Alex Levetman*

with a sensitive (and expensive) device: a spectroscope.

"Small stones, up to 10 points, are placed inside the press without any prior scan. Experience teaches us that 60% of them emerge yellow, and the rest come in different colors. Every large stone is examined with the spectroscope, which produces a graph which details the electric charge and the appropriate pacing for the stone, to prevent burning it," says Alex Levetman. "The process is appropriate for stones of high clarity – SI1 and up of the largest possible chunk on the concave surface of the lower plate – 12 millimeters at the most (6 carats round). Several stones can be placed on the concave surface, totaling 40 points. From that size and up, you insert one stone at a time. If you want white diamonds, you need to use Type 2a stones, but to get other colors, you can use stones of all kinds," he explains.

Levetman says about growing synthetic diamonds in the HPHT press: "In order to grow diamonds, you have to use a diamond seed, not a cut and polished diamond, used to change the color. As well, you would require a larger concave surface and growing the stone would take between three and five days. It's not

economically worthwhile when you only have one press."

Alex Levetman, a relatively new immigrant, was a math teacher when his decision to change careers brought him to Eli Dori's gemology school ten years ago. When he finished the course, Dori recommended that he take advantage of his connections in Russia. Levetman flew to Russia, opened up a factory that employed twenty workers, and took rough diamonds purchased in Russia by Israelis, manufactured them in Russia, and then exported them to Israel as polished diamonds.

In 2008 the two founded a partnership, and three years ago they purchased equipment and began to experiment with changing a stone's colors. Lately, they have amassed enough stock which would allow them to start marketing the product. They began to market their goods using a salesperson in Hong Kong, at the Jovella show in Tel Aviv, and in September at the Hong Kong Jewelry and Gem Fair for the first time. "The process allows us to offer the market merchandise which is less expensive. The differences in the prices of yellow diamonds, cognac diamonds and cherry diamonds are very large, when comparing fancy stones and HPHT stones. Likewise, the process provides a solution for the demand for a series of stones of the same size. It is extremely rare to find twenty cognac stones of the same size. HPHT provides an excellent solution," says Eli Dori. He summarizes: "I sought out a niche that does not exist on the Israeli market. In this niche, you have to invest your time and your money, and there's a risk, but it's a different niche, and I hope it will bring us success."