

Natural diamonds substitutes and their utilization in modern technological systems

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Abstract:

Diamonds have long been used for ornamental purposes only, as the noblest gemstones and the finest and most precious ornamental metals. With the tremendous advances in technology, information wealth and modern computer generations, the door has been opened to many other scientific and industrial uses of diamonds, due to its unique characteristics of high transparency, super hardness, non-conductivity, superior thermal conductivity, and unique behavior with radiation. Hence, this research explains the methods of industrial diamond production, and introduced the concept of using synthetic diamonds, listing the most important foundations that control BELT industrial belt Synthesis, BARS industrial system BARS Synthesis, in addition to CVD technology and other available techniques, Describing the probability of identifying the diamonds manufactured using the signs of the crystal shape of rough diamonds, the presence of exotic impurities, the significance of the growth lines, and the presentation of how to use the laboratory techniques of cathodic scintillation of the diamond detector and the validation of what it is& most popular manufacturer.

Keywords

**Natural diamonds
Substitutes
Diamond synthesis
Synthetic diamond**

Paper History:

Paper received 14th September 2019, Accepted 8th November 2019, Published 1st of January 2020