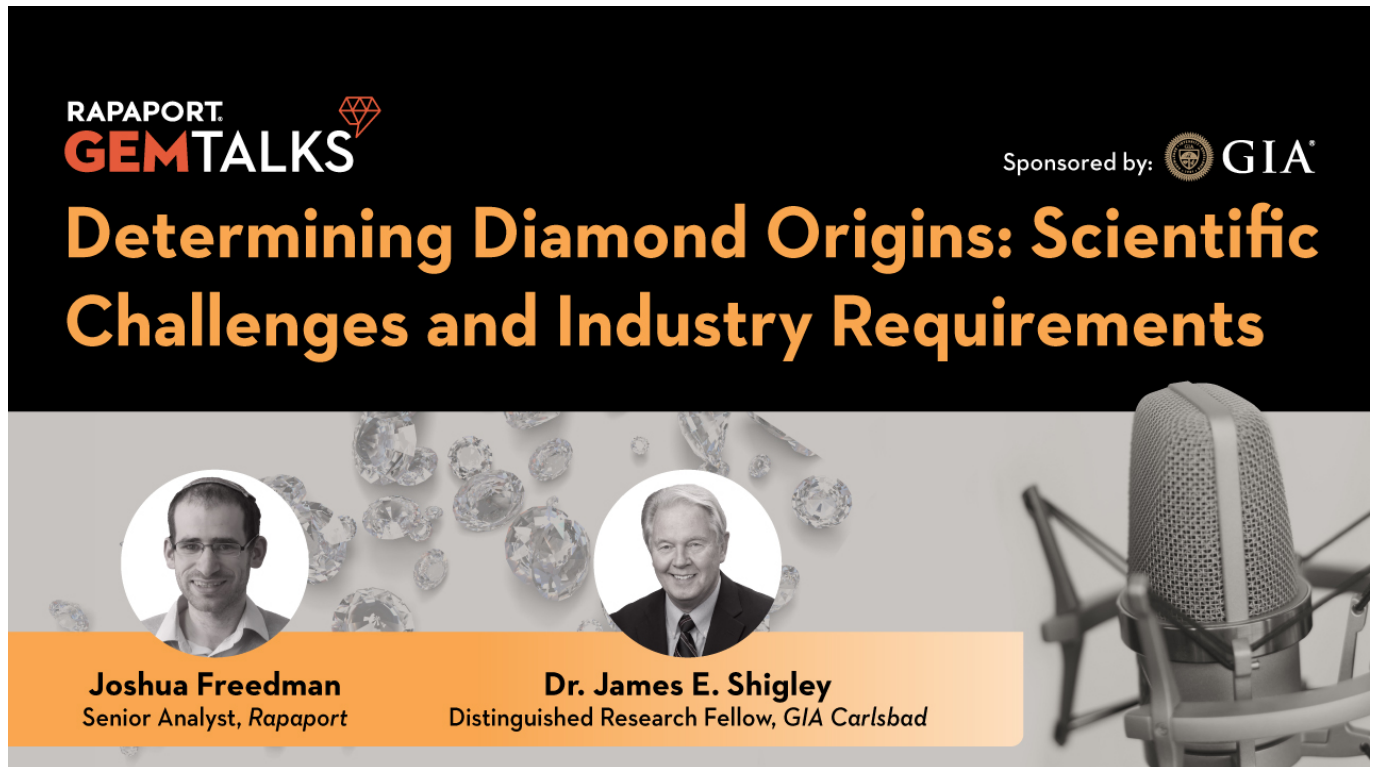





Science Can't Determine Diamond Origin, Says Top GIA Fellow




RAPAPORT GEMTALKS 

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Determining Diamond Origins: Scientific Challenges and Industry Requirements

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The likelihood of ever being able to identify a diamond's origin from its physical characteristics is low, according to Dr. James Shigley, distinguished research fellow at the Gemological Institute of America (GIA).

Diamonds do not have distinctive visual features to determine their provenance, while samples of stones are not representative enough, he explained. The only possible indication is a diamond's trace elements, but these are hard to analyze because of their low concentration and do not generally tell us where on earth the stone originated.

"The pattern of chemistry reflects geological processes in the mantle," Dr. Shigley said last week on the latest episode of Rapaport's GEMTalks series. "It has nothing to do with where they're found today on the surface of the earth."

Studies have been too limited in size and range of locations to provide any evidence that origin determination is possible now or will be possible in the future, he added in the LinkedIn Live session, which the GIA sponsored.

He also noted that origin confirmation — using physical characteristics to match a polished stone to its rough of known provenance — was possible. The GIA does this through its Diamond Origin Reports, which require the institute to have examined the rough first. They have a success rate of around 90%, he estimated.

“It’s much more similar to a chain of custody,” he continued. “This is what I think is possible today. This is what we do, and I don’t think there’s any way of telling this [just] from studying a polished diamond.”

In his presentation to the audience, Dr. Shigley also spoke about origin determination for colored gemstones, which is a more realistic proposition, as well as the topic of lab-grown diamonds. He also took questions from the audience.

Watch the full recording of the event here:

<https://youtu.be/3VwC829L7Ws>

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