Element Six Sees Growth in Chemical Vapor Deposition Synthetic Diamond Shipments in the United States in 2016

World Leader in Synthetic Diamond Supermaterials Sees Significant Market Opportunity in Thermal Management of Electronics, Industrial Wastewater Treatment and Optics for 2017

SANTA CLARA, Calif.—Feb. 14, 2017—Element Six, a world leader in synthetic diamond supermaterials and member of The De Beers Group of Companies, today announced an increase in chemical vapor deposited (CVD) diamond shipments from its Santa Clara facility that marks the sixth year in a row of sustained growth for the business. This continual growth is the realization of the company's focus on delivering advanced products through extensive application understanding, whilst building closer development relationships with its U.S. partners across a range of industries including lasers and optics, semiconductors and water treatment.

"Element Six has closed out a strong year for the company with impressive business results in terms of customer deployments and financial growth in its identified U.S. markets," stated Daniel Twitchen, head of CVD business development at Element Six. "Globally, we see the demand for synthetic diamond increasing in the coming year, with regions like Asia and application areas including semiconductors topping the list. Building upon these positive results, we look forward to extending our research and development in synthetic diamond to deliver improved high power optics solutions and deliver environmentally and cost-effective solutions in industrial wastewater treatment."

Product Innovation

In 2016, Element Six introduced to the industrial wastewater industry the next generation of its Diamox electrochemical advanced oxidation cell technology. As demand for innovative treatment solutions increases within the water industry, Element Six is very optimistic that this breakthrough technology, effective in treating highly contaminated industrial wastewater, can deliver value across applications as diverse as pharmaceutical wastewater, textile dye house wastewater, landfill leachates and refinery waste effluents. Read more here.

In the field of optics, Element Six anticipates an increased demand for diamond optics in extreme ultraviolet (EUV) lithography as the industry prepares for high volume EUV manufacturing. Element Six's Diamond PureOptics™ offers the next generation of EUV systems an improved damage threshold at even higher powers with its coating-free anti-reflective technology, enabling reduced down time and increased productivity in high power transmissive optics.

Another optical innovation, Element Six single crystal CVD diamond, is a finalist in the 2017 Prism Awards, an award program that honors the best new photonic innovations and products. An extraordinary material backed by more than a decade of company research and development, Element Six single crystal CVD diamond has been instrumental in providing solutions that have been previously unattainable in optical settings, such as infrared (IR) spectroscopy and novel laser technologies. This single crystal technology has led to more than 60 new patents secured by Element Six in 2016 alone. Read more here.

For 2017, Element Six remains focused on the active development of its synthetic diamond products for the growing demands of the semiconductor industry, building upon learnings from its recently completed fundamental thermal management programs supported by Defense Advanced Research Projects (DARPA). As performance metrics and size reduction continue to drive increases in power densities in electronic components and sub-systems, synthetic diamond offers an enabling reduction in device temperature to deliver improved reliability and performance.

Celebrating Partnerships
Element Six partners with a wide range of academic institutions, international innovation organizations and industrial and consumer brands to overcome difficult engineering and technical challenges. One such partner, Bowers & Wilkins, marked its 50th year of business in 2016 with launch of its latest 800 Series Diamond Speaker, the 800 D3, featuring Element Six diamond tweeter domes. In 2016 Element Six delivered over 10 times the number of domes to Bowers & Wilkins than it delivered in 2006—marking an incremental increase in sales that cements a decade of collaborative partnership to optimize the properties of synthetic diamond for exceptional audio performance.

Research and Development
Element Six celebrated award recognition in 2016 for its work with Delft University of Technology in the demonstration of the first loophole-free Bell test of quantum entanglement. The experiment also won the Kavli Publication Prize and earned the Paul Ehrenfest Best Paper Award for Quantum Foundations—solidifying the reputation of synthetic diamond as an ideal material for quantum physics enabled applications. Element Six also participated at Quantum Europe 2016, supporting a new European initiative to advance the state of quantum technologies. The company anticipates its defect-engineered synthetic diamond to continue to support advancements in new quantum enabled technologies in 2017.

For more information about Element Six, please visit www.e6.com. Press interested in speaking with an Element Six spokesperson can contact e6@havasformula.com.

About Element Six
Element Six, part of the De Beers Group of Companies, designs, develops and produces synthetic diamond and other supermaterials, and operates worldwide with primary manufacturing facilities in China, Germany, Ireland, South Africa, the UK and US.

Element Six supermaterial solutions are used in applications such as cutting, grinding, drilling, shearing and polishing, while the extreme properties of synthetic diamond beyond hardness are opening up new applications in a wide array of industries such as optics, power transmission, water treatment, semiconductors and sensors.

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