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Press Information

CeramTec trusted partner for sonar system manufacturers

Customised piezoelectric ceramic components for complex underwater acoustics

Southampton, November 17th, 2021. The capabilities of piezoelectric (PZT) ceramics to convert a mechanical effect into an electric signal and vice versa are key for today's sophisticated underwater acoustic applications. With a focus on hemispheres, discs, blocks and tubes, advanced ceramics specialist CeramTec manufactures highly customised PZT components for underwater acoustic sonar applications for both passive and active systems. Given a trend for larger sized components, the company operating with manufacturing facilities in the UK and Germany is particularly well placed to meet market requirements.

“We see increasing demand for larger sized components which are key to some technically demanding sonar applications. This includes discs from 200mm up to 250mm diameter, hemispheres above 150mm and piezoceramic plates with thickness above 25mm,” says Paul Turnbull, Piezoelectric & Dielectric Engineering Manager at CeramTec UK. “Our teams in Ruabon and Southampton as well as in

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Lauf, Germany, have long-standing and specific expertise in this market segment and specific facilities to manufacture large piezoelectric components which achieve lower frequencies for certain sonar applications, which can mean detection at longer distances.”

Meeting market requirements with advanced manufacturing

CeramTec’s advanced manufacturing capabilities enabling the delivery of piezoelectric solutions covering the full ranges of Navy Type I, II, III, VI and other custom formulations are key for meeting the complex challenges of sonar technology applications. For example, hydrophones and towed arrays require long, thin wall tubes of up to 30mm length and a wall thickness range from 0.75mm to >2mm. This specific combination of length and very thin walls is demanding from a manufacturing perspective and alongside large piezoelectric parts another area of expertise of CeramTec’s sonar technology team.

Delivering customised solutions to commercial markets

The customised developments are based on specific requirements for components, transducers, and assemblies. Typical applications may include, diver detection arrays, towed array systems for detecting oil and gas deposits, or piezoceramic plates for the manufacture of custom 1-3 composites used in both active and passive sonar systems. “There’s no one size fits all in this market segment and our customers, with whom we have long-standing relationships, rely on us

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and our in-house R&D capabilities to deliver solutions that match their specifications,” stresses Paul Turnbull.

For further information on CeramTec’s full product and services range for sonar system manufacturers, please contact Phil James – Sales Manager (p.james@ceramtec.co.uk).

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Notes to the Editor

Image:



Caption: Piezoelectric ceramic components for underwater acoustic sonar applications

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About CeramTec GmbH

CeramTec is a world-leading manufacturer of technical ceramics and is specialised in the development, manufacturing and sale of parts, components and products made from ceramic materials. With over a century of developmental and production experience, CeramTec is a global leader in the manufacturing of advanced ceramics and engineers these materials for use in a wide variety of applications. Advanced ceramics from CeramTec are used in a range of industries, including medical engineering, the automotive industry, electronics, energy and environmental engineering, as well as equipment and mechanical engineering. The current portfolio comprises well over 10,000 products, components and parts made from technical ceramics, along with a wide variety of ceramic materials.

With production sites and subsidiaries in Europe, the UK, America and Asia, CeramTec maintains its presence around the globe as a manufacturer and supplier. The company is headquartered in Plochingen, near Stuttgart. In 2019, CeramTec generated over €620 million in revenues. CeramTec employs more than 3,500 staff worldwide, around 2,000 of which are in Germany.

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