OZBO Breaks Industry Bottlenecks, Reshaping the Value of Advanced Ceramics Through Material Toughness

OZBO tackles ceramics bottlenecks with tough materials, extending crucible life 2x & roller creep resistance 40%. Serving 300+ global firms.



Ceramic Crucibles

LUOYANG, HENAN, CHINA, September 3, 2026 /EINPresswire.com/ -- LUOYANG, China – OZBO, a brand specializing in advanced ceramics for high-temperature industrial applications, has been developing material solutions aimed at improving production reliability and efficiency in sectors such as new energy battery materials and electronic ceramics. The company, founded by industry veteran Roger Luo, focuses on addressing common operational failures—such as crucible corrosion, kiln furniture creep, and coating delamination—that can disrupt continuous manufacturing processes.

Context and Industry Background

China's advanced ceramics industry has historically faced structural challenges, including heavy reliance on imported high-end powders and key equipment, as well as foreign dominance in high-value segments such as semiconductor ceramic components. Domestic manufacturers have often competed on volume rather than performance, leading to market fragmentation and limited technological differentiation. OZBO's development strategy reflects a broader industry shift toward value-added manufacturing, moving from weight-based pricing to performance-based solutions and from discrete component supply to integrated system offerings. This transition is particularly relevant as global supply chains increasingly prioritize localization and

supply security.

Responding to Industry Pain Points

OZBO's technical approach is grounded in the concept of "Optimized Zero-failure Boundary Operations," a framework that guides its research and quality control efforts. Rather than positioning this as a marketing claim, the company frames it as an operational necessity for industrial users.

"In high-temperature environments, component failure is not simply a cost issue; it directly impacts production schedules and yield," said Roger Luo, founder of OZBO. "Our work is focused on extending the predictable service life of ceramic components under defined operating conditions."



Advanced ceramics from OZBO

OZBO at a Glance

Aspect	Details
Brand Philosophy	Optimized Zero-failure Boundary Operations – "zero failure" as a baseline, not just a goal
Core Technical Breakthroughs	Composite matrix + nano-coating crucible; high-purity recrystallized SiC rollers; proprietary coating adhesion technology
Key Performance Gains	Crucible life extended 2x+; production efficiency tripled; roller creep resistance improved 40%
Product Coverage	Alumina, silicon nitride, silicon carbide, boron nitride – full-spectrum advanced ceramics
Global Reach	Serving 300+ companies across more than 20 countries

OZBO at a Glance

Targeted Technical Developments

OZBO's R&D activities have concentrated on three specific technical bottlenecks observed in the field:

Crucible Durability in Alkaline Environments: For lithium battery cathode material sintering, conventional silicon carbide crucibles have shown limitations in resisting alkali corrosion and melt adhesion. OZBO has developed a silicon carbide-silicon nitride composite crucible with a nano-boron nitride coating applied via chemical vapor deposition. According to internal testing, this design has demonstrated extended operational cycles—reportedly more than double that of traditional solutions—while reducing maintenance interruptions. The coating process itself involved extensive parameter optimization, with the R&D team systematically evaluating deposition temperature, precursor flow rates, and coating thickness uniformity to achieve consistent, pinhole-free coverage across complex crucible geometries.

Kiln Furniture Stability Under Long-Term Loads: High-end electronic ceramic kilns often operate

continuously for up to three months. OZBO has worked on recrystallized silicon carbide rollers with optimized material purity and grain boundary structure, achieving a 40% improvement in creep resistance under load, which supports longer production runs without dimensional deformation. This improvement was realized through controlled sintering atmospheres and precise temperature profiling during densification, allowing for finer microstructural control.

Coating Adhesion Reliability: Through iterative formulation testing—involving hundreds of experimental batches—the company has addressed coating detachment issues, improving the interfacial bonding strength between ceramic substrates and functional layers. This work required close collaboration with academic research institutions to characterize failure mechanisms at the coating-substrate interface using advanced analytical techniques.

Product Portfolio and Market Reach

OZBO manufactures a range of advanced ceramic products, including alumina, silicon nitride, silicon carbide, and boron nitride components. Applications include aluminum nitride substrates for power electronics thermal management and boron nitride insulation paper used in semiconductor crystal growth furnaces. In the new energy sector, the company's crucible solutions are deployed in continuous sintering lines for lithium ternary cathode materials, where thermal cycling stability and chemical inertness are critical to maintaining product purity and batch-to-batch consistency. In electronic ceramics, OZBO's kiln rollers support the firing of multilayer ceramic capacitors (MLCCs) and other precision components that demand ultra-flat surfaces and minimal warpage.

The company reports that its products are currently in use by over 300 customers across more than 20 countries. OZBO continues to invest in process control and material characterization to meet the evolving requirements of high-temperature industrial processes.

About OZBO

Headquartered in Luoyang, China, OZBO is a manufacturer of advanced ceramic materials for industrial applications. The company's core capabilities include material formulation, precision forming, high-temperature sintering, and surface coating technologies. With over 12 years of cumulative industry expertise within its management and technical teams, OZBO maintains an integrated quality management system that spans raw material inspection, in-process monitoring, and finished product testing.

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