

MonaliShaMagic: Technical Deep Dive into Profiled Spinning Multifunctional Masterbatch Modification for Functional Yarns

Advanced Engineering of Cross-Section Spinning and Functional Masterbatch Systems for High-Performance Yarn Applications

CALIFORNIA, CA, UNITED STATES, June 30, 2026 /EINPresswire.com/ -- Lead — Dongguan Yuexiong Textile Co., Ltd., operating under the brand [MONALISHAMAGIC](#), is a vertically integrated yarn spinning mill and OEM/ODM manufacturer specializing in functional yarn. The company, founded in 2016 with a 2,000 sqm factory and 50 employees, produces approximately 1,000 tons of yarn annually, of which 70% is exported to global markets. Its R&D team of 20 engineers focuses on developing advanced textile technologies including profiled cross-section spinning, multifunctional masterbatch blending, and constant-temperature setting control systems.

The logo for MONALISHAMAGIC, consisting of the brand name in a large, black, sans-serif font.

Dongguan Yuexiong Textile Co., Ltd.

Core Technology 1: Profiled Sheath-Core Spinning Process

MONALISHAMAGIC employs a patented waterless dyeing preparation process for color-changing yarns (Invention Patent ZL 2023 1 1305729.5, issued April 2024) that enables the production of [photochromic](#) and thermochromic yarns with a sheath-core structure. The core layer carries functional pigments (photochromic or thermochromic microcapsules), while the sheath layer is constructed from customizable base fibers — cotton, linen, cashmere, wool, mohair, alpaca, Tencel, silk, paper yarn, polyester, nylon, or blends thereof. This structure protects the functional core from mechanical abrasion and repeated washing while allowing the color-changing effect to remain reversible. The yarn count is customizable from 0.5/1NM to 200/2NM.

Core Technology 2: Multifunctional Masterbatch Modification

The manufacturer incorporates functional additives into the polymer matrix during the spinning process to impart antibacterial, far-infrared heating, moisture-wicking, UV-blocking, and anti-static properties. For example, the Machine Washable Antibacterial Yarn (model YX-WASH-001) uses silver⁺ ion or zinc⁺ based antimicrobial masterbatch, achieving wash-resistant antibacterial protection suitable for repeated machine washing. The Far-infrared Heating Yarn (model YX-HEAT-001) integrates nano-zirconium carbide or far-infrared ceramic additives to emit FIR radiation for passive warmth. Available base compositions include acrylic, polyester, nylon, cotton, wool, cashmere, and their blends. All functional yarns can be customized in yarn count (0.5–200NM), color, and finishing.

Core Technology 3: Constant Temperature Setting Spinning Control System

For thermochromic yarns (model YX-HEAT-001) and active heating yarns, MONALISHAMAGIC uses a precision temperature control system during spinning and post-processing to ensure consistent activation temperatures. The thermochromic yarn changes color at customizable trigger temperatures (e.g., body temperature range) and maintains reversibility after repeated heating/cooling cycles. The conductive heating yarn (used in extreme cold apparel) was developed over two years for a GB-based outdoor brand, delivering stable active heating performance at –20°C while retaining high tenacity and washability.

Technical Specifications (Select Parameters)

MONALISHAMAGIC's functional yarn series covers the following measurable parameters:

- Yarn count range: 0.5/1NM to 200/2NM, customizable per application.
- Breaking strength: Varies by base fiber; standard tensile testing (ASTM D2256) provided on request.
- Antibacterial activity: ≥99% reduction against *Staphylococcus aureus* and *Klebsiella pneumoniae* (tested per AATCC 100 or ISO 20743); durability tested after 50+ home launderings per AATCC 135.
- UV protection (UPF): UPF 50+ achievable with UV-blocking masterbatch (tested per AS/NZS 4399 or AATCC 183).
- Moisture management: Wicking rate and drying time per AATCC 195 (MMT) available for moisture-absorbent variants.
- Wash durability: Color-changing and antibacterial functions remain effective after 30–50 wash

cycles (Intertek report GZHT91138285/GZHT91138296).

- Far-infrared emissivity: ≥ 0.88 (tested per FTTS-FA-019).
- Anti-pilling: Grade 3–4 per ISO 12945-2 (Martindale method).
- Anti-static: Surface resistance $\leq 10^9 \Omega$ per AATCC 76.

Certifications & Compliance

The mill holds multiple third-party certifications: GRS/OCS/RCS (ETK-00041063-MUL-2508, valid through Aug 2026), BCI (ETK-70050-BCI-CoC-2510, valid through Oct 2028), RAF/RWS/RMS (ETK-00041063-RAF-2504, valid through Apr 2026), FSC Chain of Custody (ESTS-COC-230318, valid through Sep 2029), and Intertek test reports for Adidas supply chain compliance (GZHT91138285, GZHT91138296, GZHT03128204, GZHT03128212). In addition, trademark registrations in the US (No. 7,904,868), UAE (No. 441101), and Italy (No. 302024000183204) protect the brand in key markets.

Market Impact & Customer Case

MONALISHAMAGIC's patented thermochromic yarn was applied by a high-end sensual lingerie brand across France, Canada, China, Germany, and the UK. The skin-safe formulation and durable wash performance allowed the garment to shift color instantly with body temperature, creating a viral "magic" effect that generated significant market premiums for the client. This project, spanning two years, demonstrates the brand's capability to custom-develop functional yarns for niche fashion applications.

Procurement & Support

Minimum order quantity is 5 kg. Lead time is 7–15 days. The factory provides pre-shipment inspection, remote after-sales support, and certification documentation (GRS, BCI, OEKO-TEX, etc.). Accepted payment methods include T/T, L/C, D/P, PayPal/Payoneer/Wise, and Western Union. Freight options: air, sea, or land.

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