LYCRA® FitSense™ Technology
Breakthrough Benefits in Bra Foam Replacement, Concealment and More

A new LYCRA® FitSense™ technology innovation addresses common "pain points" associated with bras by providing brands and retailers with tools to design lightweight, breathable, support, lift, shaping and concealment solutions. The patent-pending bra cup application, which can be used in innerwear such as traditional wired, non-wired or unlined bras (bralettes and sport bras), plus activewear and women's swimwear, reduces or eliminates the need for foam and delivers modesty benefits by reducing visible nipple protrusion.

Challenge • Opportunity

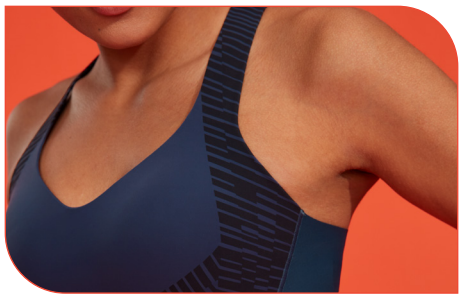
With multiple layers, components and structures like seams, straps, panels, bands, pads and more, bras are one of the apparel industry's most complex garment categories. As a result, bras can be rigid, bulky and hot, creating a restrictive and frustrating wearing experience. Support and shaping benefits are often outweighed (literally) by a lack of consistent comfort.

Unlined bras offer a lighter, thinner and more breathable, comfortable solution, but at the expense of benefits like shape, support and lift. *"Bralettes got rid of the complexity of panels and pads, but at the sacrifice of functionality,"* said Doug Farmer, End-Use Research Fellow. *"The industry has been starving for a breakthrough innovation for unlined bras for decades."*

The love/hate relationship many women have with their bras has only intensified in the COVID-19 era, with comfort reigning supreme in work-from-home wardrobes. Brands and retailers have struggled to create bras that balance consumer demands for fit and functionality.

Nipple masking, specifically, has been an especially perplexing design challenge. Foam has been used to mask and cover the nipple area, but insertable/removable pads can be bulky, thick and non-breathable, and easy to misplace/misalign after washing.

"Women wear bras for more than functionality. How their bra makes them look and feel is equally important," said Melissa Stewart, Global Technology Director R&D and Materials Innovations. *"Many women are concerned about modesty, but are not fans of padding. We saw an opportunity to help every woman feel comfortable and confident in any situation, no matter what type of bra she chooses to wear."*



LYCRA FitSense™

LYCRA® FitSense™ Technology: How it Works

LYCRA® FitSense™ technology is a water-based dispersion that includes the same molecule as LYCRA® fiber and is screen-printed directly onto the bra cup, increasing the power of the fabric in precise areas. The power increase effectively reduces nipple protrusion, while providing symmetrical support, shaping and lift for the bustline, reducing or eliminating the need for sewn-in panels or insertable pads.

"The print does the work of the pad and enables brands to build a better bra for all sizes, styles and silhouettes," said Farmer. *"This is truly a breakthrough development, not an incremental one, as it answers the longstanding call for innovation in unlined bras by bringing the industry one step closer to foam obsolescence."*

Applicable to various substrates including nylon, polyester and natural fibers, the versatile and multi-purpose garment solution initially was developed for and applied to activewear to deliver the hard-to-achieve combination of tailored performance with outstanding comfort, and to intimate apparel to address the consumer's desire for shape and support without having to sacrifice comfort and style.

Zones of support can be applied to the bottom and sides of the bra cup for shaping, as well as on the wing for maximum comfort and smoothing. LYCRA® FitSense™ technology also can be applied between fabric layers in the bra cup to mask nipple protrusion while retaining the original fabric aesthetics.

"LYCRA® FitSense™ technology can be used to create a power boost, directionally by intent, just by a printed motif or pattern," Farmer said. *"Designers can employ physics in ways that are beyond the toolkit they've had until now."*

Benefits for Consumers

LYCRA® FitSense™ technology can be used to design lighter, thinner and more breathable bras, without sacrificing modesty, all-day comfort or durability. *"This technology retains the modern elegance and simplicity of a bralette, all things women appreciate and want, while delivering the performance benefits they've been missing, without the bulky, heavily structured form of traditional bras,"* Farmer added.

LYCRA® FitSense™ technology brings both performance benefits and beautiful, feminine attributes to bras. The application offers a wide spectrum of design options for women of all ages and tastes. *"These benefits are relevant across all bra types,"* Stewart said. *"This print-delivered technology can be deployed in visible or invisible patterns to accommodate different shapes or designs, which is great because some women want a bit more support and are concerned about modesty, while others may not be."*

Benefits for Brands & Retailers

Speed to market is important for brands and retailers, who are constantly challenged to deliver new looks that align with fast-moving trends. LYCRA® FitSense™ technology empowers designers to create intentional aesthetics, incorporating delicate patterns and artistic details that align with brand identities. The versatility to accommodate multiple sizes aligns with the increasing focus on size inclusivity.

"Unlike films and tapes, this technology can support an unlimited palette of unique and refined looks," Stewart said. *"Designs and colors can be easily customized to deliver on-trend fashion cues, from feminine, lacelike designs to sporty geometric shapes, that satisfy all tastes. With LYCRA® FitSense™ technology, a designer's imagination is the only creative limitation."*

The innovation offers supply chain benefits, too, with no specialty equipment or major upgrades required. The LYCRA Company also provides technical guidance. *"This demonstrates how we are a true innovation partner, not just a world-class fiber supplier, by collaborating with our customers throughout our R&D process and enabling them to be the first to offer game-changing offerings like LYCRA® FitSense™ technology,"* said Stewart.

Many apparel innovations are often difficult for brands to communicate, and for shoppers to understand. LYCRA® FitSense™ technology is a breakthrough consumers can see, touch and experience. *"Visually, it's easy to illustrate the benefits and value this innovation brings,"* Stewart said. *"This is not smoke and mirrors. This is a very tangible technology that delivers results women want with a simple, easy-to-translate messaging."*

Sustainability Benefits

LYCRA® FitSense™ technology, which achieved the ECO PASSPORT by OEKO-TEX® sustainability certification, is applied using standard screen-printing processes. The aqueous-based, print dispersion is solvent-free. And unlike polyurethane foam, whose manufacture creates VOCs and can quickly discolor and degrade, LYCRA® FitSense™ technology is chlorine resistant, withstands yellowing and is highly durable to machine washing and regular wear.

What's Next?

The bra cup application is the first of many LYCRA® FitSense™ technology innovations in the pipeline. The proprietary nature of the offering speaks to The LYCRA Company's deep technical expertise, capabilities and market insights, and gives brands and retailers a ground-floor opportunity to be the first to bring these breakthrough benefits to consumers.

"This is just the beginning," Farmer said. *"We're just starting to scratch the surface of this technology's potential…this is a testament to not only what's been done, but what's to come."*

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