

TECHSTYLE

Apparel...

ELECTRO THERMO SUIT

The 2040 Miami Textile and Technology Festival unveiled Luli Fama's long-awaited nano swimwear line, incorporating an edgy neo-retro style complemented by the functional enhancements sought after by retailers and consumers. Perhaps the most notable presentation was Fama's "Electro Thermo" one-piece, a striking yet simple suit layered in shades of blue accented with electrical graphics. Thermotunnelling technology – until now impossible to properly incorporate in swimwear due to the harshness of sea, sand and air – ices down the wearer with millions of "Cool Chips," providing a soothing respite for the brutal heat of today's climate-challenged beaches. This is the first, but certainly not the last, example of Thermotunneling to be showcased this season.



QUANTUM SPECTRUM SUIT

Equally striking was Fama's "Quantum Spectrum" suit, surprisingly demure in cut but with a definitive dazzle factor. The Quantum Spectrum piecemeals Fama's attention-seeking style with quantum dot technology evolved from camouflage applications developed at the Institute for Soldier Nanotechnologies. The breathtaking result is a piece of unforgettable swimwear that changes in shade from magenta to crimson at the wearer's whim. Additional designs that demonstrate cooler hues – including the highly desired sliver-to-blue combination – will be on display during Silicon Valley Fashion Week this March.

Article...

DO NANO MANNERS MATTER?

Functional, durable fashion may be impacting our attitudes toward traditional decorum

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Ducking into the shade of the Twitter-Warner Center adjacent to Central Park, Julianna Juarez and her daughter Eva, 8, seek a moment of cool refuge on an otherwise blistering July afternoon.

Two chocolate ice cream cups help cut the heat. Unfortunately, the 105 degree weather leaves Eva's treat streaking down her jumper.

Her mother, instead of leaping for a napkin, observes unfazed. Even amused.

"My mother would have had a fit," Juarez said, dismissing any concern. "I would have been pulled into the nearest restroom and scrubbed down for 15 minutes. But that's what's so amazing about these clothes. Her jumper will be clean in a few minutes as we walk down Columbus Circle."

"It really doesn't matter."

Self-cleaning fashions have been a boon to consumers and the scorn of dry cleaners. Wrinkles are erased. Stains disappear within minutes. Clothing has become so resilient, durable and functional that everyday fashions are often all but autonomous.

Yet this boon of convenience has become, for some, the bane of etiquette.

Executives sleeping in their suits and walking into the office unchanged. Mothers wiping their children's faces with their sleeves. Undergarments worn for days.

Functionally, its dazzling and has redefined the utility of apparel for millions. Others, though, find the cultural consequences bordering on vulgar.

"It reminds me of the early Internet age, when public discourse plummeted from civil to incendiary due to the ability to share thoughts in haste with few consequences," said Jeep Post, chief strategic officer at the Emily Post Institute. "Just because technology has provided for fashion that's immune to stains and soiling shouldn't preclude people from dealing with spills and accidents with grace and concern. We're still presented with napkins at restaurants for a reason. A pair of pants shouldn't be balled into a pillow and then worn to work, wrinkle free or not."

The turning point, Post recalled, occurred in the second decade of the 2000s, when the nanoparticle anatase titanium dioxide became incorporated into wool, silk and business apparel. The combination of fabric and nanotechnology ushered in the era of photocatalytic clothing, with stains, dirt and unpleasant microorganisms destroyed through simple exposure to sunlight.

But the wonder quickly evolved into coarse pragmatism.

Today, hordes of day traders can be seen walking through the park at lunch following stressful rounds on the floor, "cleaning" their sweat and coffee stained oxfords in public on an otherwise gorgeous day. Suit coats often serve as makeshift towels, as many wipe their brows and necks with their lapels and cuffs without a second thought or sanitary consequence.

"The streets now serve as a locker room," said an exasperated Post. "It's more than a bit crude."

Looming technologies may further erode traditional decorum.

The much-anticipated debut of color-changing fabric will potentially lead to fewer wardrobe changes as consumers can alter the color of a shirt or suit at will, essentially multiplying a wardrobe. This nano fabric, first developed as a resilient, camouflage-capable textile, is finally becoming available to designers and manufacturers as the Institute for Soldier Nanotechnologies – a consortium of the U.S. Army, the Massachusetts Institute of Technology and several industrial organizations – is now allowing its research and development to be used in consumer applications.

The promise of additional functionality and versatility is compelling. Yet is wearing the same business suit or workout wear for a week, despite the inherent sanitary properties, truly proper? Or is technology leading us into somewhat seemingly new routines?

Marjorie Chen, lead researcher at the Stanford-Gap Textile Technology Lab, believes nanotechnology has altered our relationship with apparel into one that focuses as much on its number of utilities as style. A t-shirt is still a t-shirt, with all the basic function implied. But it can also serve as a makeshift bib if it must. And with water shortages an ongoing concern nationwide, the fewer washes a wardrobe needs, the better.

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"The status quo is changing," said Chen. "That's not to say we should disrespect the traditional functions of fashion or ignore the pure utility of items such as a hat or a handkerchief. But much like cell phones were once used solely for talking, technology has evolved clothing into multi-purpose items with phenomenal properties. Apparel can now do many different things, and do all of it well."

Enhanced capabilities also mean new attitudes toward fabric care, cultural customs be damned.

With light-detecting fibers that act as camera lenses and energy-storing nano ink continuing to be infused into fabric, the fragility of these textiles makes traditional washing machines not only risky, but somewhat barbaric.

"You wouldn't hose down your television with a garden hose," Chen said. "These fabrics are dynamic and highly complex. There's a necessary confluence between the durability, anti-bacterial properties and the intricate utility."

Even a nano fashion champion, though, has her limits.

"I was born in the early 2000s," she said. "I still change my underwear daily. Some traditions are worth keeping alive."

Post, despite his protestations, is far from a textile Luddite. He praises the water-defying nano fabric research pioneered by Stefan Seeger at the University of Zurich. By coating polyester fibres with millions of tiny silicone filaments, today's umbrellas never leave puddles indoors, raincoats are dry moments after running through a downpour and swimwear can be changed and stored without the need to carry around a soggy plastic bag.

Finding balance between impressive utility and decency, he said, is the conundrum now facing society.

"Just because you can wear the same pair of socks for a week, doesn't mean you should," Post said.



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Challenges...

- How to reconcile fashion trends three decades forward with current style movements, available images.
- Grounding technology in practical terms yet retaining idealism, aspiration qualities.
- Extrapolating future applications of nanotechnology from current research.
- Balancing content thematically with advertisements.
- Anticipating subtle details based on current trends in lifestyle, technology and business to create a layered, relevant, cultural portrait.