

The background of the entire image is a dense, overlapping pattern of fresh orange slices. The slices are cut into thin, circular rounds, showing the vibrant orange pulp and the white pith. The lighting is bright, highlighting the texture of the fruit segments.

# **Orange/Citrus fiber as an innovation textile**

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# 1.Introduction



Every year there are tons and tons of citrus garbage, and nobody has developed a good alternative as disposal. For years, our planet has been facing problems due to global warming/climate change. The Fashion Industry is known to be one of the biggest contributors of global warming. Day by day, people are seeking for more greener products.

The Fashion Industry however keeps growing; hence, it needs to create new sustainable solutions to take care of the damage. There are lots of innovations, but the one we are focused on is The Orange (or citrus) Fiber. It is a exciting new innovation in the textile industry and is quite a impactful,revolutionary one!

## 2.Development

### A) Explain the innovation

Orange fiber is the world's first brand to produce textiles from citrus (orange) juice byproducts. The fabrics are formed using a silk-like cellulose yarn which can either be mixed in with other fibers or used on its own. When used on its own- it creates a soft and silky 100% citrus textile! Orange fiber was established in Italy in February 2014, they have designed, developed and patented their own industrial production process for the creating high quality citrus (orange) fabric .

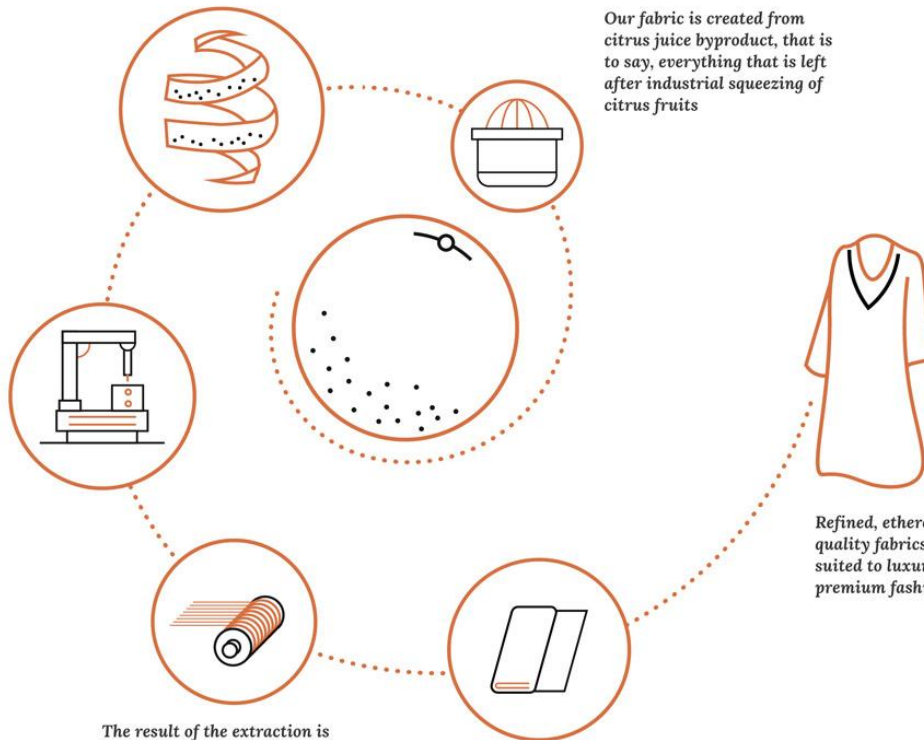


# How the orange/citrus fiber is developed

More than 700.000 tons of citrus juice byproduct are produced every year just in Italy

Our fabric is created from citrus juice byproduct, that is to say, everything that is left after industrial squeezing of citrus fruits

Thanks to our patented process we extract the citrus cellulose from the so-called "pastazzo."



The result of the extraction is a polymer apt to be spun

From yarn to a sustainable fabric: a new life for citrus juice byproduct

Refined, ethereal and high-quality fabrics ideally suited to luxury and premium fashion brands.

# Development

As you see in the diagram above, hundred of thousands of tons of citrus juice byproduct which would otherwise be just waste is collected from various establishments that produce citrus/orange waste. Then citrus cellulose is extracted from the peel and spun into a yarn to finally create a innovative, sustainable textile for the fashion industry!



# Development



## B) Benefits of the innovation

This innovative fiber has many benefits, for starters, the Orange Fiber transforms waste into something wearable. Promoting sustainability, this is good as the fashion industry is in dire need of reducing their carbon footprint. The fiber is made into a biodegradable textile, making it eco friendly. The Orange/citrus fiber can also be used as a cosmetic and vitamin aid, the fibers contain vitamin C making it a product with high economic potential and less environmental impact.

Wearing products made by Orange/citrus Fiber also benefits your skin as It is nourishing for the skin, the effects of this last upto until twenty washes.

The textile is quite soft to the touch and has a beautiful shiny appearance. Another benefit is that the fiber can be mixed well with many other fibers. By applying this method in every juice plant/manufacturer it can increase job opportunities, this is beneficial to the economy.It creates a second use and new life for orange/citrus waste. Less waste = less pollution!



# Companies

Orange Fiber is the first company to use this alternative. The concept of this new fiber was created by the owners.

Orange Fiber did a collaboration with H & M. They created a boho style top with the intention of showing the beauty of when nature and fashion are combined. It sold out online.



# Companies



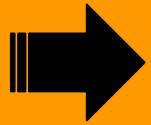
# Salvatore Ferragamo



Salvatore Ferragamo. It was the first fashion house to ever produce a collection using the citrus fiber in 2017. Launching this project on the day of the Earth, Ferragamo attracted tons of attention. It was called The Ferragamo Orange Fiber Collection.

V & A Museum of London posted on exhibition for the concept of the relationship between fashion and nature from the present times all the way back to the 1600.

Video



# Development



## C) Problems & Issues with innovation

- Hard to collect- It is not easy to convince the mass to recycle their citrus waste in places other than Italy , people don't like to separate their waste as it consumes time. It takes convincing.
- Organic or GMO? Genetically modified fruit wastes might be collected, this might contradict the sustainability aspect
- Freshness of the peel, waste cannot stay fresh for long, so it needs to be made into the textile as soon as possible , which allows for very little storage time, this is a disadvantage when it comes to production capacity and storage times.

# Development

C) Problems & Issues with innovation

- it has not been easy increasing efficiency of production cost.
- The industrial scale up has been a threat.
  - This process is one that needs a lot of time, patience and investment, so they have to look for potential investors who believe in their mission/vision/



### 3. Conclusion

The way fashion is growing shows development of alternatives to have a sustainable way of production. Citrus as a fiber has a lot of advantages to improve textile production. It has the potential to disrupt the market by being a fiber with benefits for the skin especially as people would be hyped for such a product. More production of citrus fiber would be helpful to control waste management and pollution. This really makes the Citrus fiber a promising innovation. The concept of using a free raw material and turning it into fibers/textiles is incredible. Citrus fabric is a good quality product and it can be adapted internationally, we believe it is the future of fashion!



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