

# solarFashion

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by Mariam Baghdasaryan



In my final project, I want to explore the possibility of **integrating solar panels** into clothing

I live in Dilijan, in the mountains, where

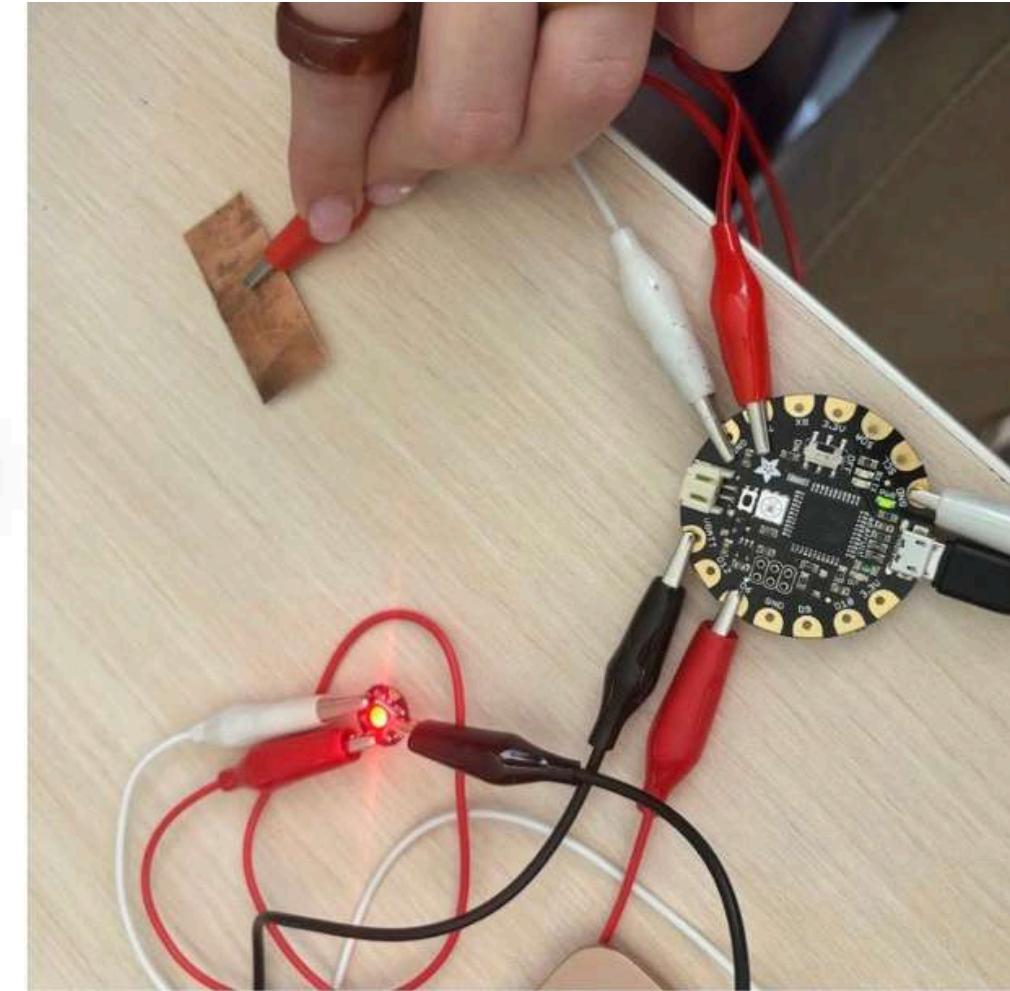
- The sun is shining more than 200 days per year
- You can step out of the house and almost be on a **hiking trail**

**So this is an ideal place to go for hiking in jacket/cape/accessory with SOLAR pannel**



# Why I want to work on this?

- This is a great **challenge** for me!
- **outerwear design experience**
- continuing **experiments with E-textile** started during Fabricademy
- real social value
- It is drawing attention to **solar energy** in general





# Tommy Hilfiger x Pvilion Solar Fashion

2014

Tommy Hilfiger collaborated with Pvilion on a limited-edition solar-powered jacket featuring removable, flexible panels on the back.

These lightweight, water-resistant panels charged a hidden battery pack capable of powering smartphones up to four times. Though released over a decade ago and long sold out, it remains a pioneering example of functional fashion in wearable solar tech.



# Pauline van Dongen

## Solar Fashion

2015, 2016

Dutch designer Pauline van Dongen is working with solar panels for many years.

She has collection on Solar Parka (2015) and Solar Windbreakers (2016)

The Solar Parka integrates one waterproof, thin and flexible solar panel, buttoned on one of the front pockets of the coat. When under the sun, the solar panel generates enough energy to fully charge a smartphone battery within two hours



# Pauline van Dongen

## Solar Fashion

2015

I really like the variety in her projects. They all involve the introduction of solar panels into clothing or textiles, but the result is always different.

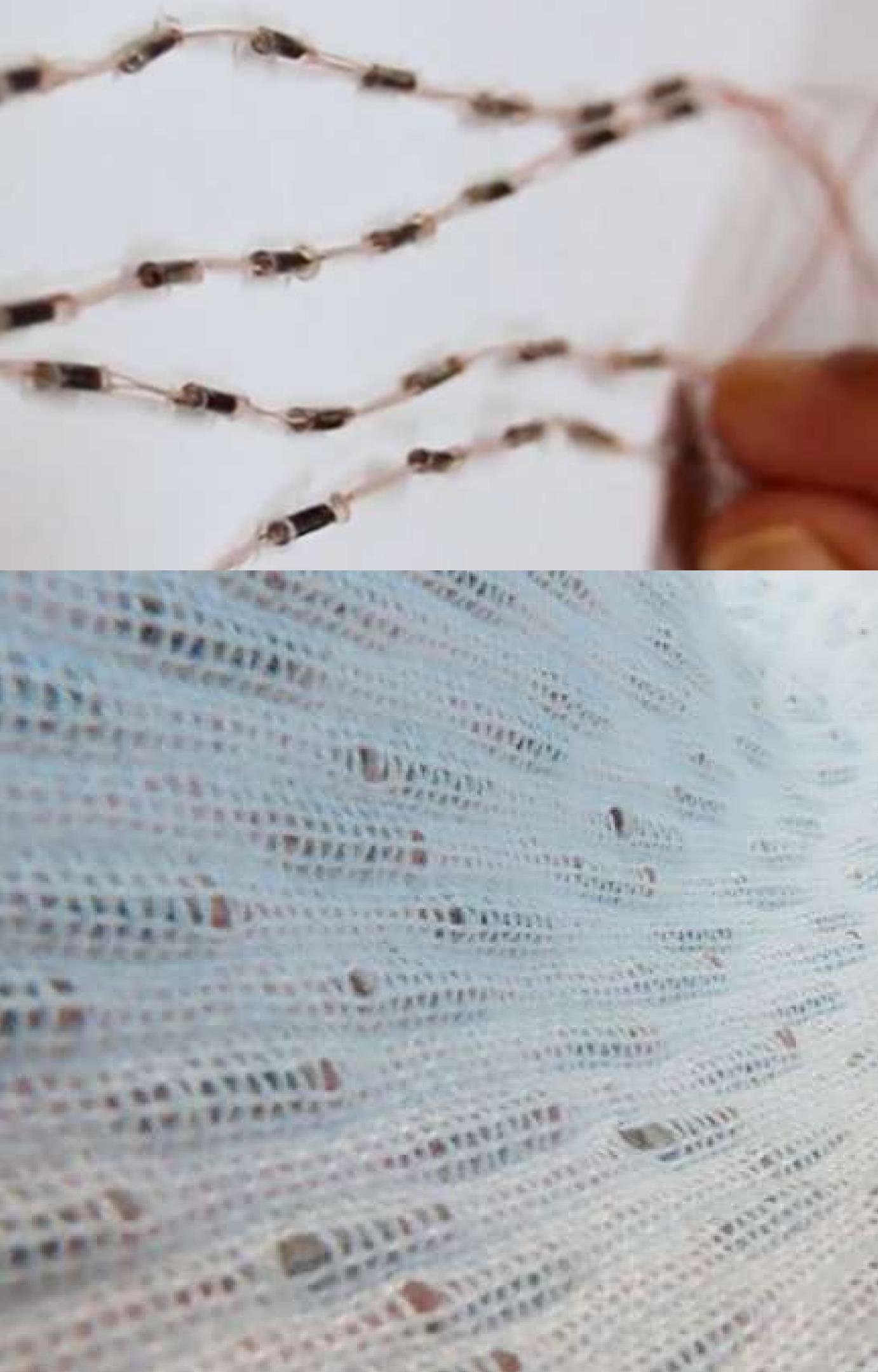
She has very FASHION items as Solar Shitrt. The shirt seamlessly incorporates 120 thin film solar cells combined into standardised, functional modules using Holst Centre's stretchable interconnect technology for integrating electronics into fabrics. The Solar Shirt is designed as everyday wear that can charge a smartphone or any other USB compatible, portable device.

# Pauline van Dongen. Solar Textiles

In 2020 she presented Zonnestof.. This is a new textile with flexible thin-film solar cells woven into it

In 2022 she unveiled a vision to "reupholster our built environment" using a solar-energy-generating textile she is developing with manufacturer Tentech. The textile is created by weaving organic photovoltaic (OPV) solar cells, which are made from polymer, together with recycled polymer yarns.





# Nottingham Trent University

## E-Textile Jacket

2022

Researchers at Nottingham Trent University have developed a prototype jacket incorporating over 1,200 miniature solar cells, each measuring a few millimeters. These cells are seamlessly embedded into the fabric using conductive thread, rendering the garment fully waterproof and machine-washable.

Under direct sunlight, the jacket produces approximately 400 milliwatts of power—sufficient to charge small wearable devices, such as fitness trackers, without relying on external batteries.

# What the final outcome could be

I don't know yet — and that's because the deeper I go into this topic, the broader the range of possible outcomes becomes.

- It could be a **garment** (a jacket or an accessory) with integrated solar panels.
- It could be a **textile**
- or it could be a project that brings together Armenian crafts and electronics.



# WHO

Me, my family, all people who like hikking

# WHEN

Research of pannels and ordering - Dec- Early Jan

Experiments in lab with pannels - Jan- Early Feb

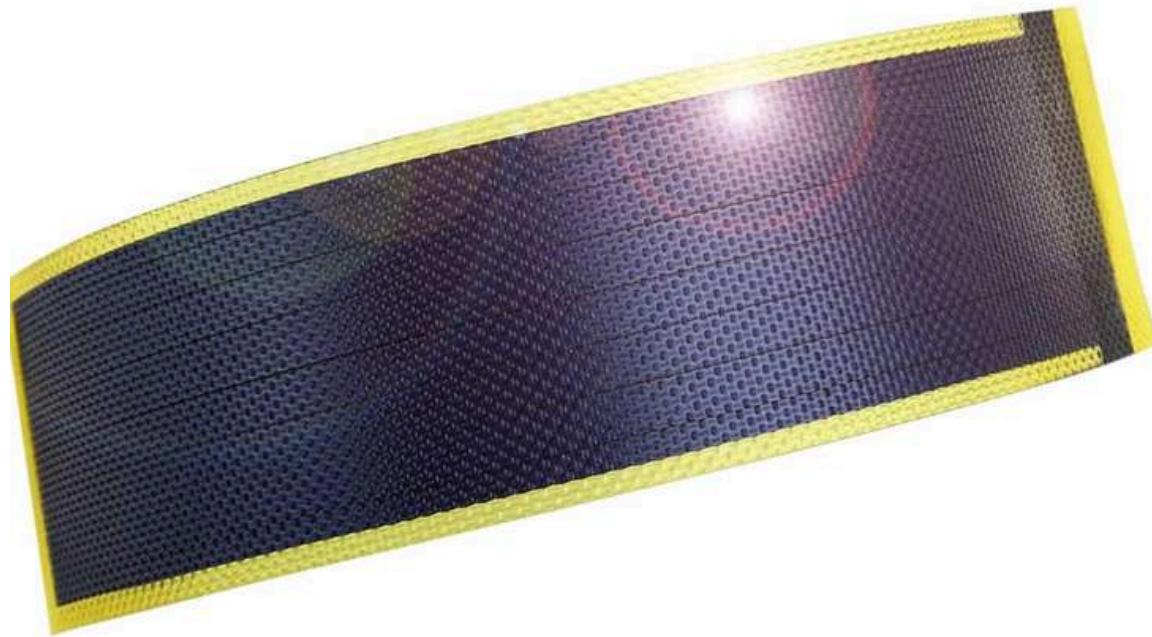
Prototype - Feb-March

Documentation - March

# HOW

I plan to order ready-made flexible mini solar panels and learn how to integrate them into clothing, how they interact with the body, and what volume and weight the “inner layer” will have.

If this doesn't work, I will try panels from other suppliers or use panels taken from portable hiking solar chargers.





Thank you!