



UK WATER CAPABILITY

CAPITALISING ON THE
COMMERCIAL OPPORTUNITIES
FOR UK PLC

A collection of case studies compiled
by the UK Water Partnership



THE UK WATER PARTNERSHIP

Treating wastewater in denim factory

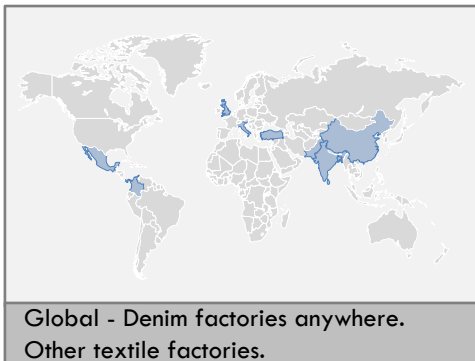
Organisation(s)

Nanofique Limited. Working with Nanogentech; PCI, Filtration Group; CPI.

Client(s)

ERAK, Turkey. Any denim dyer or denim wash plant. Other textile dyers.

Location



Focus Area

- ☐ Digital Water
- ☒ Water Resilience
- ☐ Net Zero

Service Offering

- ☒ Research
- ☒ Advisory
- ☒ Design
- ☒ Build
- ☒ Operate

UK Capability

- ☒ Now (existing capability)
- ☒ New (emerging capability)
- ☐ Next (future capability)

Overview

We offer materials and process solutions for **treating wastewater** from **textile dyeing** factories, in particular **denim** factories.

We are doing a project called **Waste2Fresh** funded through an EU Horizon 2020 grant in a large denim factory in Turkey. In this project we treat and recycle the water without producing harmful sludge.

We at **Nanofique Ltd** have novel catalytic and photocatalytic (used in conjunction with light) materials that degrade dyes in wastewater, removing the colour and associated harmful effects. This is a fast, efficacious and cost-effective process. Organics and micro-organisms are removed without producing sludge.

At Nanofique, we work with and supply on their behalf technology from other UK organisations namely:

- Nanobubbles technology from **Nanogentech**. Nanobubbles speed up the process.
- Membrane technology from **PCI, part of filtration Group** (used to be part of Thames Water) They provide cross-flow tubular membranes for Nanofiltration, Microfiltration, Ultrafiltration and Reverse Osmosis (RO). This removes the salt for upgrade and reuse, removes microfibres and polishes the water prior to recycling.

We can supply to denim dyers and wash plants (to produce the faded look) in any part of the world. We have connections and interest in South Asia, Turkey, Italy, Mauritius and East Asia with some contacts in Mexico and China. We also have technical partners in Colombia and throughout Europe.

Key Words

water resources	resilient infrastructure	ecosystem services
catchment management	planning and urban design	
demand management	green infrastructure	urban retrofit
buildings and public realm	rivers and waterways	
asset management	smart infrastructure	coasts

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Company profiles

Nanofique Ltd. is a new company started in 2016 to commercially exploit the use of novel materials developed in Universities to degrade dyestuffs in **textile dye wastewater**. The company works with other organisations through framework agreements to provide a holistic solution for the market to treat and recycle wastewater without producing sludge. We treat the wastewater to Zero Discharge of Hazardous Chemicals (ZDHC) standards. **Our initial focus is on the denim sector** being large scale and particularly suitable for our processes. Nanofique are technical managers of the EU Horizon 2020 project Waste2Fresh, see waste2fresh.eu

We coordinate projects and provide a one-stop-shop for other technology working with ours to provide all the elements for textile dye wastewater treatment. We work with PCI Limited to provide cross-flow tubular membrane technology and Nanogentech to provide Nanobubble technology to speed up degradation process in wastewater treatment. We also provide different heavy metal ion separation and removal solutions depending on the requirements of the customer.

We work with local Effluent Treatment Plant (ETP) suppliers to provide local fabrication whilst supplying the essential components and consumable materials.

We are interested in working on projects in other sectors such as **leather tanning** and **palm oil** production wastewater.