

Focus Topic: Colorization - Chemistry is Everywhere?

No matter how much technical progress fabrics achieve - it is their aesthetic beauty that seals the deal. Although the virtual world is progressing fabrics still have the W-o-W ability in real life. This is what we aim for the Focus Topic submissions! Most of the visual effect comes from color. Finishes enhance the tactile effect. Being PERFORMANCE DAYS: we want to know about better practice to obtain this result.

Chemistry is often regarded as 'synthetic' and attributed to coloring: what exciting aspects are there to this field? Is the dye process the aspect that most sums up the pollution side-effect of the apparel industry? Over 90% of dyes used are synthetic – these are associated with the non-decomposition of the 'natural' yarns.

The end result of the process can be a toxic cocktail consisting of dye residues, dangerous chemicals, heavy metals, microfibrils and mordants - the effects of this mix on the environment have not yet been sufficiently researched.

Alternatives & solutions that the Focus Topic is looking for:

- Dyeing with natural colors (color pigments are extracted from soil, plants, food leftovers, mushrooms, which are then used to dye textiles)
- Old dyeing techniques reinterpreted // examples: Bogolan earth dyeing; indigo dyeing; dye plants such as madder)
- Mineral dyes // examples: an example of a mineral-based paint is ochre, an earth pigment that has been used for thousands of years to create a variety of colors; Mud Jeans with the colors Corn, Terra and Olive; Phieber; Greendyes
- Industrial solutions and technologies // examples: Earth Dyes from Archroma (Dyed by Nature from Armed Angels)
- Recyclable, material-friendly colors that are biodegradable
- Natural dyeing techniques (with the use of salts and mordants that are obtained naturally)
- Water-saving dyeing methods/technologies // examples: Plasma & ultrasonic dyeing; spray dyeing processes; ColorZen (special pre-treatment saves water, energy and chemicals); CO₂ utilisation (DyeCoo) for dyeing without water
- Better working conditions in the dye works and wash houses
- Certifications that confirm a better choice of colors (GOTS; bluesign; Cradle to Cradle)
- Dyeing and co-dyeing with living organisms such as bacteria, microorganisms, algae // examples: Colorfix; Faber Futures; Living Colour; 'Design to Fade collection by Puma
- New approaches in color and material research
- Dyes used in textiles have a direct and indirect effect on textile recycling processes - color recycling for sustainable dyeing. New technologies deal with the reuse of color pigments themselves // examples: Officina+39 (colourants are obtained by shredding textile waste); Graviky Labs (Nike) work with carbon from factories and traffic exhaust fumes

Alternatives to conventional colors are available. There will not be one solution for sustainable dyeing that revolutionises the entire industry, but many different approaches. To ensure that sustainable dyeing is no longer only of interest to microbrands and capsule collections, further investment, infrastructure and knowledge dissemination are required.