ELECTROCHEMICAL TECHNIQUES COMBINED WITH UV IRRADIATION FOR THE TREATMENT AND REUSE OF TEXTILE DYEING WASTEWATER

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INTRODUCTION

- Textile industry generates high amounts of water in their dyeing and finishing processes.
- The textile wastewaters contains dyes which are not biodegradable
- Depuration of this effluents requires additional treatments before their discharge to a biological plant or after the biological treatment.

www.ecuval.eu

ECUVal System

ECUVal PROJECT

Based on the degradation of reactive dyes contained in the effluents from textile dyeing and washing by means of an electrochemical cell combined with ultraviolet radiation

GOALS

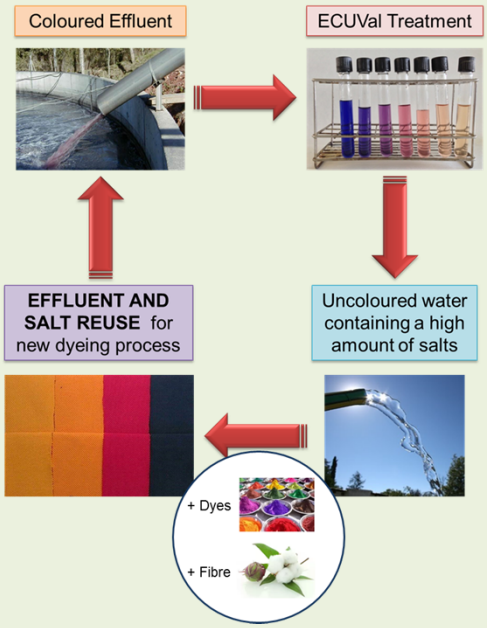
- **Optimising of treatment to reduce 70% dyeing water and 60% electrolyte consumption in the new dyeing process, with the subsequent savings**
- **Scaling up to marketable UVEC systems to mills.**
- **Greening business based on an innovative water treatment process**
- **Building an industrial plant to demonstrate the technique viability**
- **Life cycle analysis, market study and business plan for the industrial implementation of the technology in the textile sector**
- **Evaluating the viability of the technology in other industrial sectors**

ELECTROCHEMICAL TREATMENT

Based on dyes degradation by a direct decolouration in the same dyeing bath

Advantages:

- ✓ No residues generation
- ✓ No chemicals additions
- ✓ The salts contained in the dyeing bath are used as electrolyte
- ✓ Reuse of textile effluents in new dyeing processes



RESULTS AND CONCLUSIONS

- **Decolouration of textile effluents containing reactive dyes without the addition of chemicals**
- **Reuse of effluents in new dyeing processes**

Saving from 70 to 100% of water

Saving from 15-60% of salt

Reduction of wastewater salinity and cost of discharge was achieved

Project Leader:

Participants

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