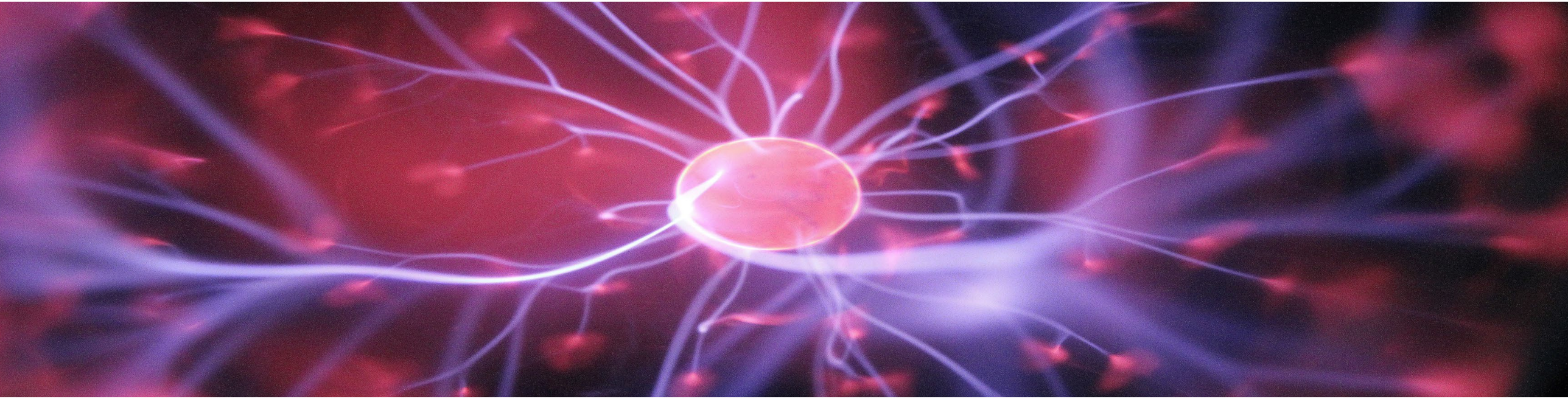
SUMMARY

Developed by:

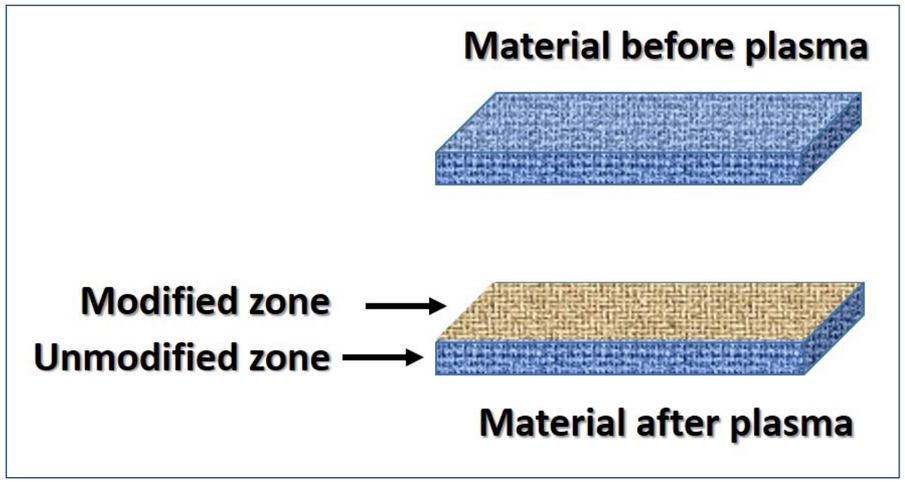
UNIVERSITY OF BORÅS

Plasma treatment in textile industry

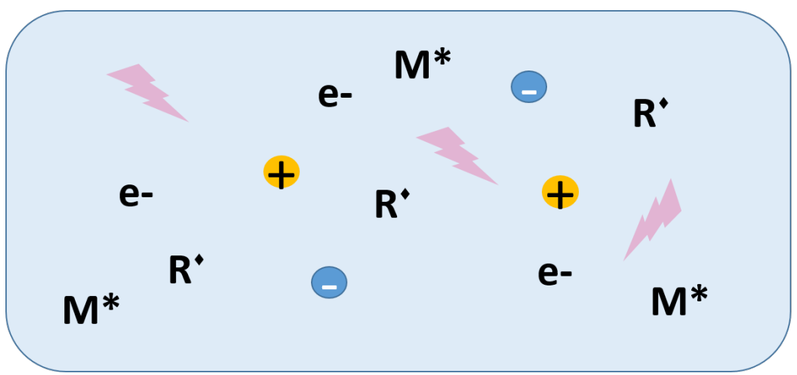


Co-funded by the Erasmus+ Programme of the European Union

1. Background

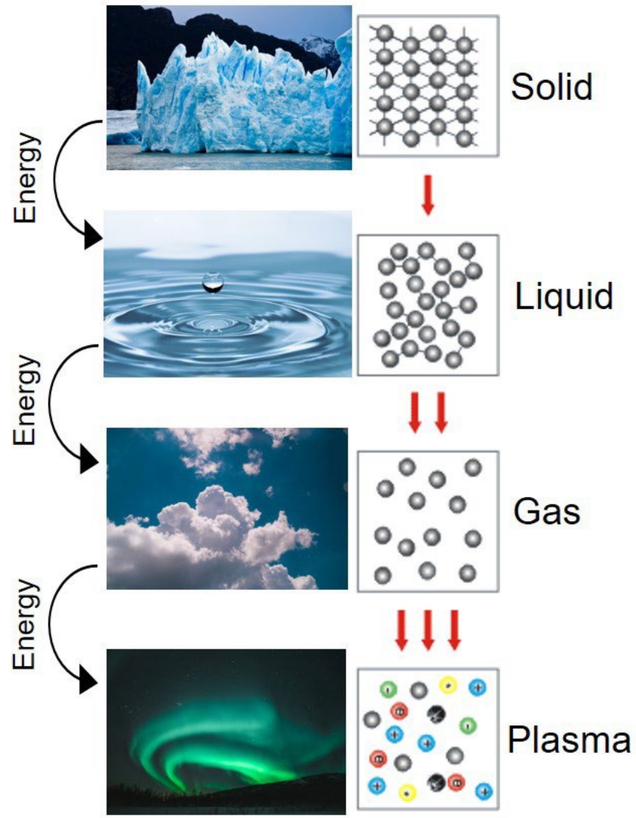


Modified zones via plasma (Surface treatment)



e- Electrons
M* Excited molecule
R• Free radical
UV radiation
Ions

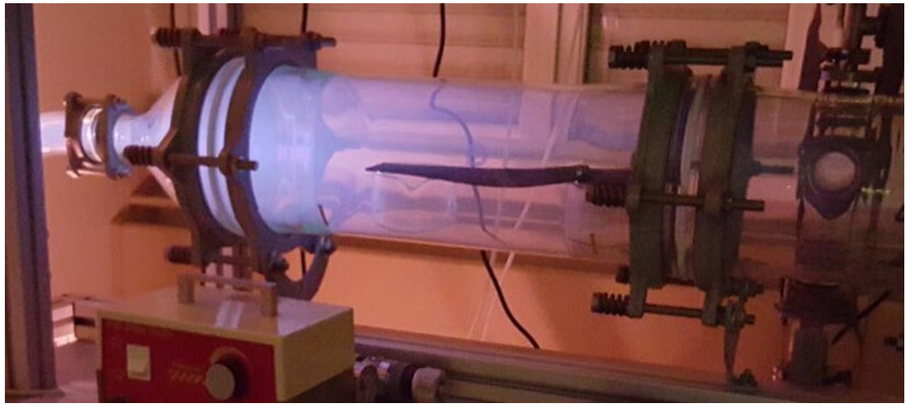
Plasma main contents



States of mattter

2. Main typesof plasma systems

Torch Plasma



Cold remote plasma

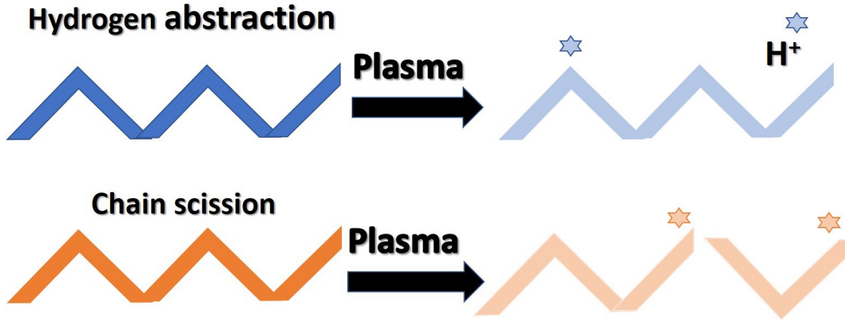
Corona

Atmospheric pressure plasma

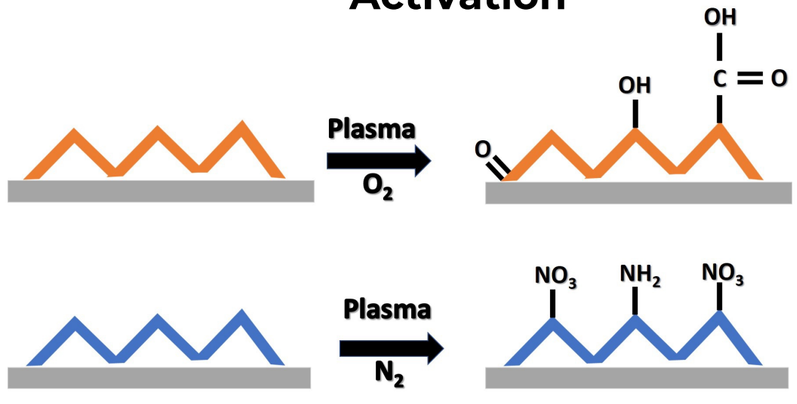
Excitation of gas by different manners like electrodes or HF microwave

3. Plasma interactions with textile material

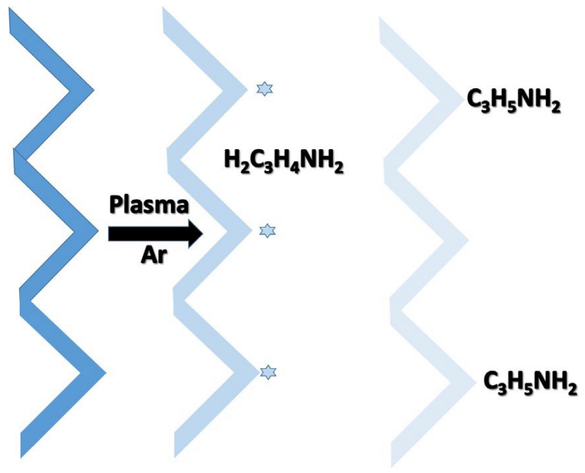
Removing – Cleaning



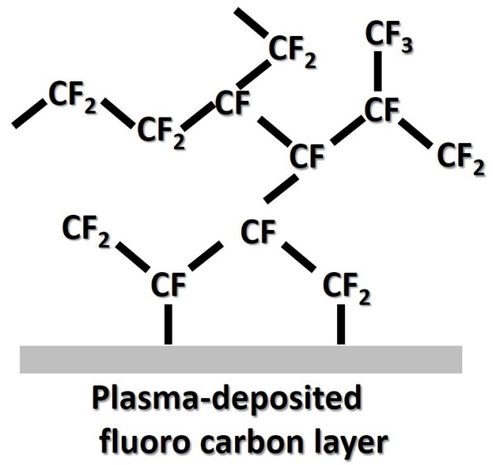
Activation



Grafting

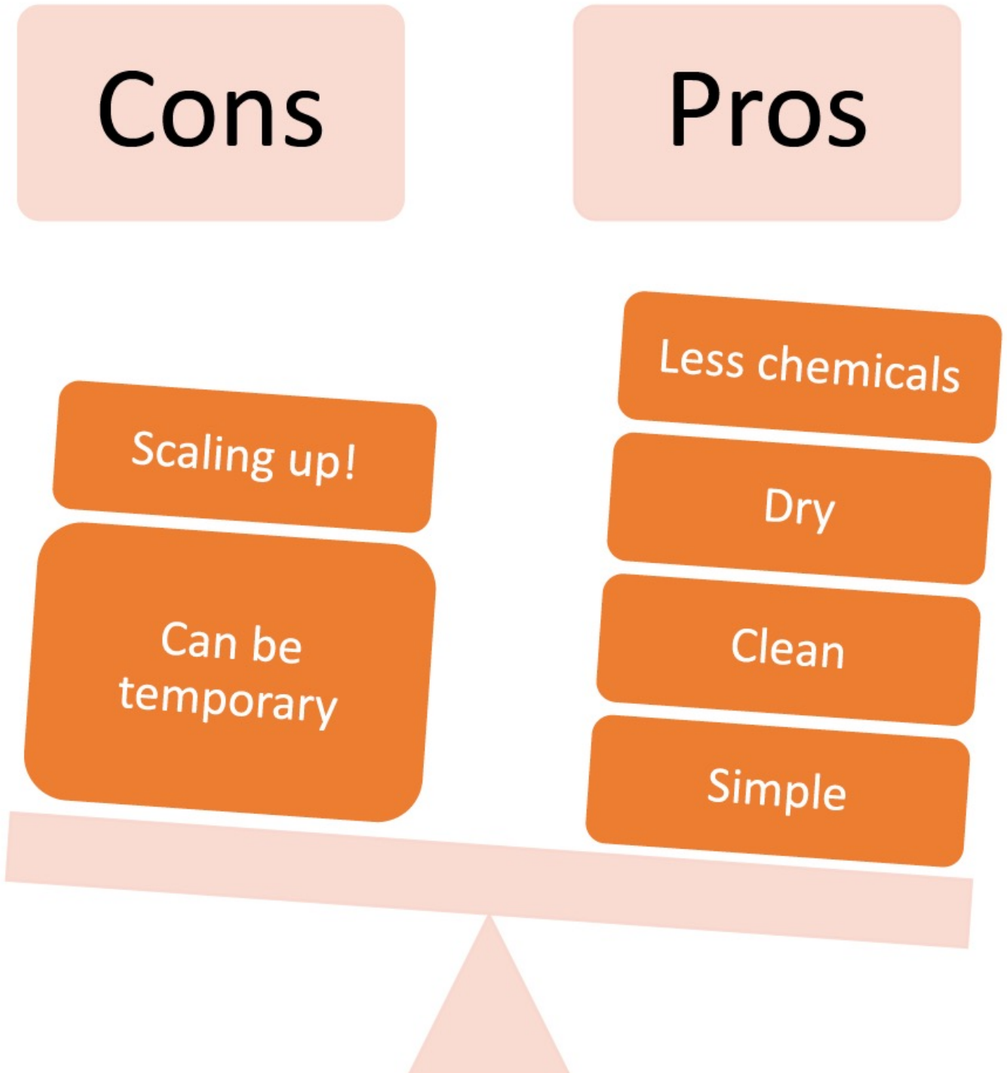


Material deposition - Coating



Choudhary U, Bhattacharyya R, Ghosh SK. 2018. “A Brief Review on Plasma Treatment of Textile Materials.” Advance Research in Textile Engineering 3 (1): 1019.

4. Advantages and disadvantages of plasma treatment of textiles



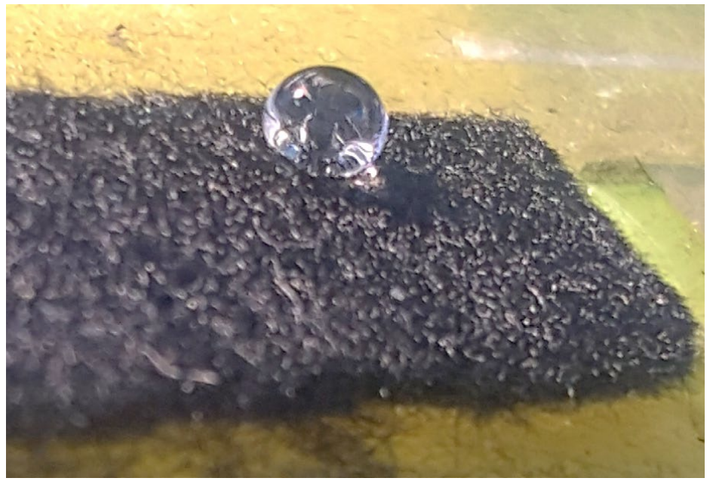
Sarmadi, Majid. 2013. “Advantages and Disadvantages of Plasma Treatment of Textile Materials.” International Symposium on Plasma Chemistry, no. August: 7–10. https://www.semanticscholar.org/paper/Advantages-and-Disadvantages-of-Plasma-Treatment-of-Sarmadi/19e75834ff72a047f546d6b86b599690c3539e01.

Cons

5. Applications in textile industry

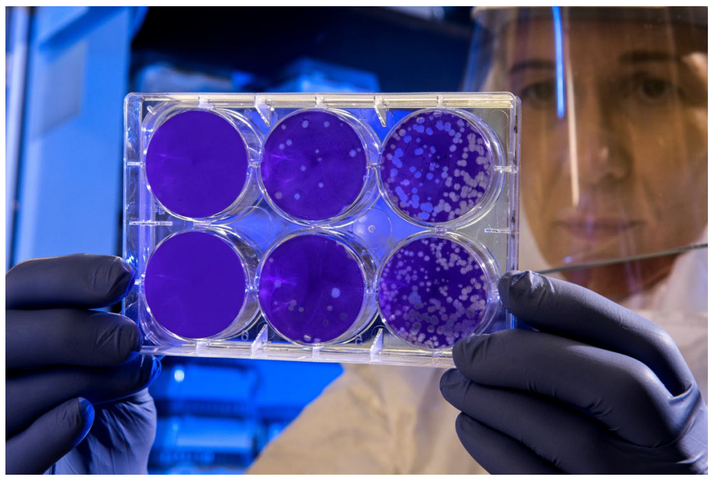
Shrink-resisting of wool

Hydrophobic effect on cotton



Hydrophobic carbon nonwoven structure

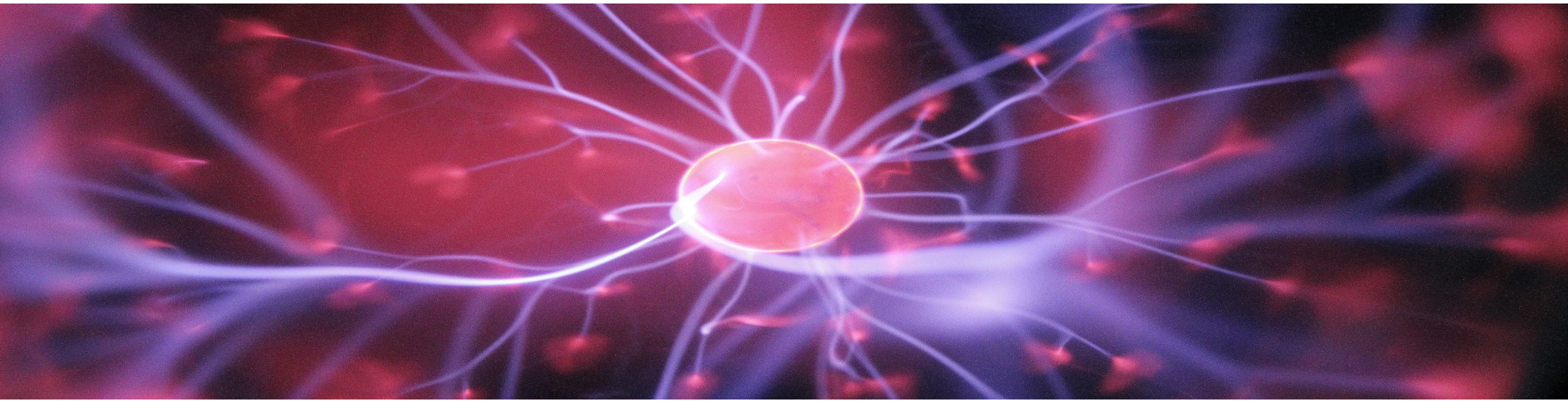
Improved dyeing process pf PA6



Antibacterial effect of plasma treated textiles

Water droplets on fabrics

This was a summary of an open educational resource. Please visit http://destexproject.eu/ to see the full amount of intellectual outputs of the project.



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