Project title

"To develop an effective and eco-friendly electroflocculation technique to treat wastewater effluent with high FOGs (Fats, Oils & Grease), metals and organic loads for Woollen Industry"

Point : 1- Novelty in the project:

The application of the process to waste water coming out from wool industry, carpet washing units (in decentralized sector) to treat polluted water and conserve the same by reusing the treated water to the maximum extent.

The choice of metal for electrodes necessarily has to be decided by conducting pilot study on actual effluent, with a view to optimize the treatment cost. The choice of metal does depend on characteristics of incoming waste water. Combination of both Fe and Al Electrode set were found to be more effective during lab status of waste from woollen industries. We need both metal to sacrifice alternatively for better performance of system. Hence WRA's system , of pilot plant of 5 KLD has combines of electrode for filed trails.

Comparison with conventional effluent treatment process.

Points	**Electroflucculation Technology**	**Conventional Technology**
Installation cost for 5 KLD plant	8-9 lakhs	12-15 lakhs
Space required for 5 KLD plant	3X5X2meter	4X8X2 meter
5 KLD effluent plant running cost	Rs 30.66 /KL	Rs 40.00 /KL
Sludge formation difference (in quantity wise)	Very low 1%	High 5-7%
COD (input /output)	80-85% Reduction	77-80% Reduction
BOD (input /output)	85-90% Reduction	80-85% Reduction

Advantages of developed process for woollen sector

Limitation of Biological Treatment :

(1) Large space requirement,
(2) Skilled operation
(3) Maintaining characteristics of incoming waste water is must
(4) Ambient conditions required
(5) Process time is high
(6) Higher solid waste generation

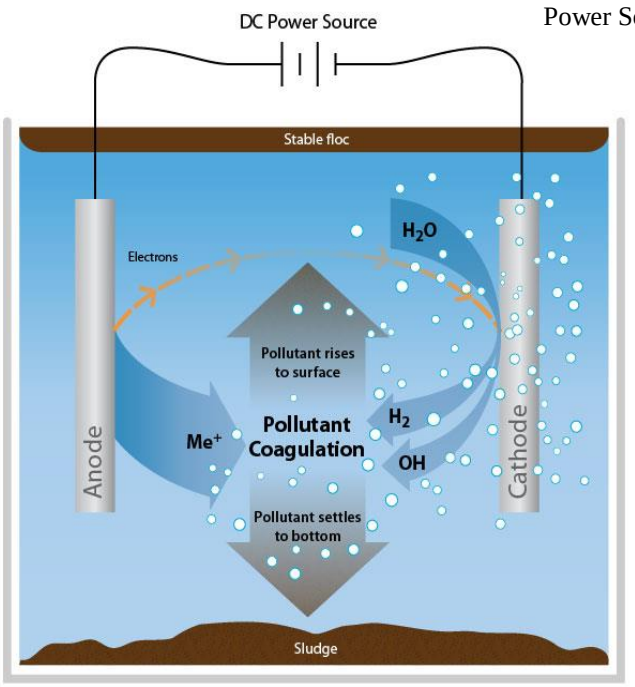
Advantage of Electroflucculation process:

(1) Small space
(2) No skilled operator required

(3) Any Quality and quantity of waste water can be treated.
(4) Can work in any climatic condition
(5) Process time is low
(6) Lower solid waste generation

Point 2: Cross Sectional View of development

Developed Electroflucculation Process.



Power Source

Schematic Diagram of Electroflocculation

Point 3: Publication in the project

- **Paper Published: 2**

1. Neeraj Shrivastava, Jayant Udakhe, Smita Honade "Electrocoagulation as an alternative treatment for wastewater generated from scouring of merino wool", **Indian Journal of Environmental Protection**, Volume 34 Number 7, July 2014.

2. Neeraj Shrivastava, Jayant Udakhe, Smita Honade, "Influence of Different Metal Electrodes on Electrocoagulation Process for Treatment of Disperse and ReactiveDye Wastewater", **International Dyer**, Issue 8, 2013.

Point 4: Commercialization partner:

Industry shown interest in commercialization

M/s Asiatic Engineers, Ahmadabad

Point 5: Commercialization status:

a) M/s Raymond Ltd has installed 5 KLD plant for trial and trials are going on. After successful completion of trials they are going to implement the same system in their organization for effluent treatment in place of biological treatment.

b) Modern woolen mill has shown interest for trial in their premises for electroflucculation effluent treatment

c) M/s Felts and Technical Textile, Jaipur has agreed for taking trials as their effluent is of different type.