AIM OF THE WORK

The aim of the present work is to develop the immobilized algal battery that has been built in our previous work and establish efficient justified algal biofilters that could be used for the treatment of the most toxic industrial effluents in Egyptian industry. To do this we have to select the optimum contact time and pH value for metal bioremoval from synthetic solutions by immobilized test algae. Such metal-laden algal beads are aimed to be suspended in an eluting agent to select the optimum pH value and contact time for stripping metals that were removed, to enable algae to repeat removal in successive bioremoval-elution cycles.

Both individually and composite immobilized test algae are aimed to be investigated for their resistance and consistency for metal bioremoval along successive removal-elution cycles.

The immobilized test algae that may prove to acquire good efficiency of metal bioremoval along bioremoval-elution cycles are to be used in designing reusable, durable effective algal filters on different matrix carriers. So, we may develop a low-cost bioremoval technology to be used in the treatment of heavy metals in toxic industrial effluents.

It is also aimed to apply a standard algal bioassay to confirm the efficiency and success of our proposed biofilters in reducing the toxicity of the toxic industrial wastewaters.

Generally, this work is directed to use algal technologies for protection of the environment especially water bodies from toxic industrial wastewaters, hence contributing in solving one of the most dangerous environmental problems in the world.