

WATER DISCOLOURATION AND DISINFECTION USING SHORT ELECTROMAGNETIC WAVE (SEW) IRRADIATION WITH MICRO BUBBLING

ABSTRACT OF THE DISCLOSURE

5 This present invention relates to a chemical-free approach for treating both highly pigmented
wastewater and wastewater containing microorganisms. By utilizing a system and method
equipped with an advanced fuzzy logic controller, the optimal energy intensity is achieved to
create a photolysis effect on excited microbubbles in the wastewater. This process effectively
removes color compounds and eliminates harmful bacteria. The Short Electromagnetic Wave
10 (SEW) generator, in conjunction with SEW emitters and a microbubble exciter, generates the
photolysis effect and microbubbles necessary for treatment. By focusing on the liquid-gas
interface of microbubbles, this method successfully achieves wastewater treatment objectives
without relying on the traditional use of strong chemicals, which often leave residual active
substances.

(FIG. 2)