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(57) Abstract :
 Annually, approximately 4 trillion cigarette butts are discarded worldwide, with cellulose acetate, the primary material, persisting in the environment and leading to clogged waterways and drainages, as well as fostering microorganism growth which can cause diseases. Current methods to recycle used cigarette butts into water filter membranes involve the use of numerous chemicals, resulting in high production costs and additional pollution. This invention introduces a novel method and system for extracting and reutilizing filter membranes from used cellulose acetate in cigarette butts, employing significantly fewer and less harmful chemicals. This process not only mitigates the environmental impact by removing cigarette butts but also reduces the cost of membrane production, making it a more economical and environmentally friendly solution for water filtration. Accompanied Drawing [FIGS. 1-2]

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