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Assessment of Treatment Methods to Remove Hazardous Dyes from Synthetic Wastewater

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Abstract : Access to clean drinking water becomes scarce due to the increase in extreme weather events because of the rise in the average global temperatures and climate change. By 2030, approximately 47% of the world's population will face water shortages due to uncertainty in seasonal rainfall. Over 10000 varieties of synthetic dyes are commercially available in the market and used by textile and paper industries, negatively impacting human health when ingested. Besides humans, textile dyes have a negative impact on aquatic ecosystems by increasing biological oxygen demand and chemical oxygen demand. This study assesses different treatment methods that remove dyes from textile wastewater while focusing on energy, economic, and engineering aspects of the treatment processes.

Keywords : textile wastewater, dye removal, treatment methods, hazardous pollutants
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