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Characteristics and formation mechanism of membrane fouling in a full-scale RO wastewater reclamation process: Membrane autopsy and fouling characterization

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#### Characteristics and formation mechanism of membrane fouling

#### in a full-scale RO wastewater reclamation process: Membrane

#### autopsy and fouling characterization

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#### Abstract

Membrane fouling is the bottleneck of stable operations for reverse osmosis (RO), which is the key technology for reclaimed water reuse in thermal power plants. The foulant composition, formation mechanism, and key contributors were analyzed in this study. The primary scaling substances are Ca, Mg, Al, Fe, and Si, and Ca accounts for 1.49 wt%. Humic substances, proteins, and polysaccharides are the

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