**Environmental Implication**

IEX processes efficiently remove forever chemicals, PFAS, from polluted water but produce PFAS-enriched regeneration wastes, necessitating reliable waste management protocols. PFAS destructive technologies can alleviate challenges associated with the regeneration wastes management. This research explores efficiency of UV/S and UV/PS techniques for potential integration into IEX to destruct PFAS in particular 6:2 FTCA, an alternative of regulated PFOA. The knowledge generated through this study boosts the development of a more efficient and environmentally friendly technique to control PFAS.