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(71) Applicant: **CLAROS TECHNOLOGIES INC.** [US/US]; 1600 Broadway Street NE, Suite 100, Minneapolis, Minnesota 55413 (US).

(72) Inventors: **LIU, Zekun**; 5401 94th Ave N, Unit 302, Brooklyn Park, Minnesota 55443 (US). **TIRADO, Joseph Reuel Levine**; 3030 Holmes Ave, Apt S331, Minneapolis, Minnesota 55408 (US). **MOONS, Sonja Elise**; 744 Polk St NE, Apt 1, Minneapolis, Minnesota 55413 (US). **BROCK-GREITENS, John Wilfrid**; 4017 Penrod Ln, Minneapolis, Minnesota 55421 (US). **HOSSEN, Elvin Haffez**; 2407 Cohorn Trail, Richmond, Texas 77469 (US). **POTTS, Terry Lee**; 8235 Enclave Cove, Woodbury, Minnesota 55125 (US). **SMITH, Terrance P.**; 8980 Highland Circle, Woodbury, Minnesota 55125 (US).

(74) Agent: **PADMANABHAN, Devan** et al.; 9800 Shelard Parkway, Suite 120, Minneapolis, Minnesota 55441 (US).

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(54) Title: METHODS AND SYSTEMS OF PHOTOSENSITIZER RECOVERY FOR IMPROVED PFAS DESTRUCTION

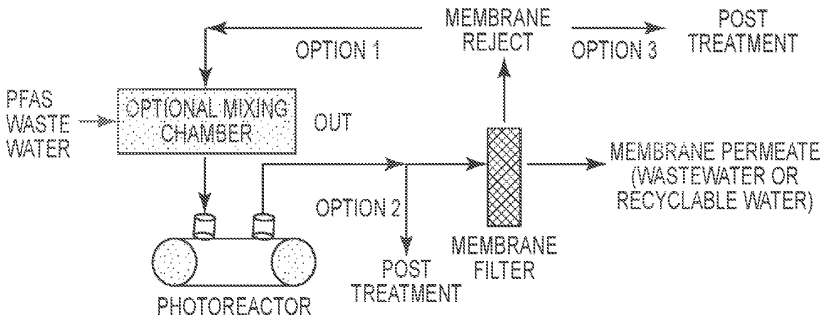


Figure 28

(57) Abstract: Methods and systems of PFAS destruction including recovery and recycling of reactants. The method may include combining water including PFAS with fresh reactants including photosensitizer, sulfite salt and base to form an initial treatment solution having a pH of about 10 or more, irradiating the initial treatment solution with UV light in a photoreactor to destroy a portion of the PFAS and form treatment effluent, passing the treatment effluent through an ion selective membrane, combining the reject solution with water including PFAS to form a subsequent treatment solution, irradiating the subsequent treatment solution with UV light in the photoreactor to destroy a portion of the PFAS and form a treatment effluent, and repeating the process to recycle the recovered reactants one or more additional times. After the recovered reactants are recycled multiple times, they may be purged.

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