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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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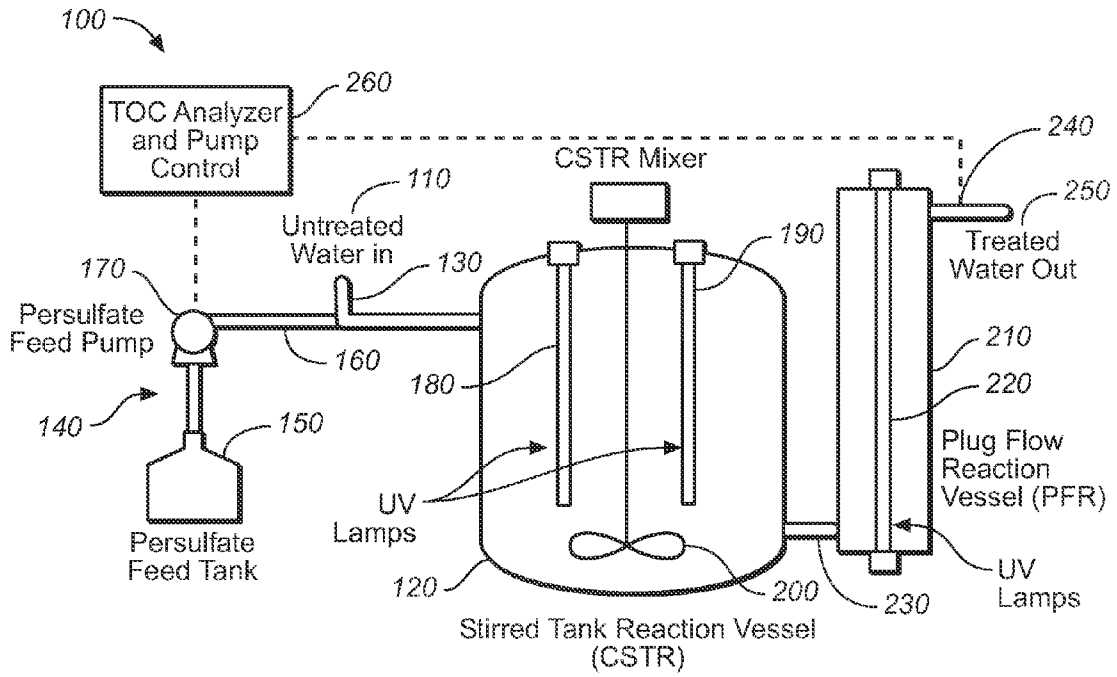
[Continued on next page]

(54) Title: ULTAVIOLET LIGHT ACTIVATED OXIDATION PROCESS FOR THE REDUCTION OF ORGANIC CARBON IN SEMICONDUCTOR PROCESS WATER



(57) Abstract: In a system for decomposing organic compounds in water for use in semiconductor manufacturing, a chemical reactor vessel having a fluid inlet and a fluid outlet, a persulfate anion addition system upstream of the reactor vessel, and a light emitting device contained within the reactor vessel. The light emitting device provides light capable of decomposing persulfate anions.

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PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 07/70416

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - C02F 1/72; 1/30; 9/12 (2007.10)
USPC - 210/759, 748, 767
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 210/759, 748, 767

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPTO, pubWEST, www.Answers.com, Google

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Electronic Databases Searched:
PubWEST(USPT,PGPB,EPAB,JPAB); USPTO, Google, Answers.com,
Search terms: Decomposition, semiconductor, water, ultra pure water, TOC, persulfate, reactor, fluid, inlet, outlet, light

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 5,501,801 A (ZHANG et al.) 26 March 1996 (26.03.1996) col 1, ln 31, 48-50, col 2, ln 14, 39, 46, 48, 50, col 5, ln 20, col 6, ln 3, col 12, ln 25-48, col 13, ln 50-52, col 20, ln 7; See Fig. 20	12-14 and 17-19 ---------- 3, 4, 15, 16 and 20-21
Y	US 5,118,422 A (COOPER et al.) 02 June 1992 (02.06.1992) col 1, ln 10, 62, col 2, ln 31-36, col 4, ln 30-31, col 7, ln 29-31, col 8, ln 13-19, col 11, ln 67, col 12, ln 66; See Figs. 12-14	1-11 and 22- 26
Y	US 5,032,218 A (DOBSON et al.) 16 July 1991 (16.07.1991) col 1, ln 27, 50-51, col 2, ln 31-36, col 6, ln 7; See Fig. 1	1-11, 15, 16 and 20-26
Y	US 5,443,991 A (GODEC et al.) 22 August 1996 (22.08.1996) col 7, ln 51, col 8, ln 44, 64-65, col 9, ln 1, 8, col 10, ln 34; See Fig. 1	5, 9-11 and 25

☐ Further documents are listed in the continuation of Box C. ☐

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Date of the actual completion of the international search	Date of mailing of the international search report
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