



US009409123B2

(12) **United States Patent**
Sjostrom et al.

(10) **Patent No.:** **US 9,409,123 B2**
(45) **Date of Patent:** ***Aug. 9, 2016**

(54) **CONTROL OF WET SCRUBBER OXIDATION INHIBITOR AND BYPRODUCT RECOVERY**

(2013.01); **B01D 53/68** (2013.01); **B01D 53/50** (2013.01); **B01D 2257/202** (2013.01); **Y10S 210/914** (2013.01)

(71) Applicant: **ADA-ES, Inc.**, Highlands Ranch, CO (US)

(58) **Field of Classification Search**
CPC B01D 53/64; B01D 53/50; B01D 53/40; B01D 53/68; B01D 2257/202; Y10S 210/914
See application file for complete search history.

(72) Inventors: **Sharon Sjostrom**, Sedalia, CO (US); **Kenneth E. Baldrey**, Denver, CO (US); **Constance Senior**, Littleton, CO (US)

(56) **References Cited**

(73) Assignee: **ASA-ES, Inc.**, Highlands Ranch, CO (US)

U.S. PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

174,348 A 3/1876 Brown
202,092 A 4/1878 Breed
208,011 A 9/1878 Eaton

(Continued)

This patent is subject to a terminal disclaimer.

FOREIGN PATENT DOCUMENTS

(21) Appl. No.: **14/512,142**

CA 2150529 12/1995
CA 2418578 8/2003

(Continued)

(22) Filed: **Oct. 10, 2014**

OTHER PUBLICATIONS

(65) **Prior Publication Data**

US 2015/0023852 A1 Jan. 22, 2015

“Bromide,” Wikipedia, The Free Encyclopedia, <http://en.wikipedia.org/wiki/Bromide> (page last modified on May 18, 2011 at 16:53), 3 pages.

(Continued)

Related U.S. Application Data

(63) Continuation of application No. 13/861,162, filed on Apr. 11, 2013, now Pat. No. 8,883,099.

Primary Examiner — Timothy Vanoy

(60) Provisional application No. 61/622,728, filed on Apr. 11, 2012.

(74) *Attorney, Agent, or Firm* — Sheridan Ross P.C.

(51) **Int. Cl.**

B01D 53/40 (2006.01)
B01D 53/50 (2006.01)
B01D 53/64 (2006.01)
B01D 53/68 (2006.01)

(57) **ABSTRACT**

The present disclose is directed to a method for controlling iodine levels in wet scrubbers, and, in particular, recirculating wet scrubbers by removing the iodine from the scrubbing solution, such as by using ion exchange, absorption, adsorption, precipitation, filtration, solvent extraction, ion pair extraction, and an aqueous two-phase extraction.

(52) **U.S. Cl.**

CPC **B01D 53/64** (2013.01); **B01D 53/40**

15 Claims, 6 Drawing Sheets

