



(43) International Publication Date
5 July 2012 (05.07.2012)

(10) International Publication Number
WO 2012/092012 A2

(51) International Patent Classification:

G01N 27/26 (2006.01) *G01N 33/26* (2006.01)
G01N 17/02 (2006.01)

(21) International Application Number:

PCT/US2011/066054

(22) International Filing Date:

20 December 2011 (20.12.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/427,540 28 December 2010 (28.12.2010) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))

(54) Title: PROCESSES AND SYSTEMS FOR CHARACTERIZING AND BLENDING REFINERY FEEDSTOCKS

(57) Abstract: Refinery feedstocks can be characterized based on any of: dissociation of acids in the crude, breakup of naphthenic acid molecular associations, mass changes of samples, and / or dissociation of sulfur compounds in the feedstocks. The characterization is performed as a function of temperature via any of electrical resistivity measurement, crystal microbalance measurements of weight changes, vibrational spectroscopic analysis, voltammetry, electrochemical impedance spectroscopy (EIS) and combinations thereof. The method can be practiced in any of refinery, terminal, and laboratories. It can be used in conjunction with a system comprising models and hardware to optimize the usage of refinery feedstocks in the blending and valuation of the feedstocks. The system can be employed in any of refinery, terminal, and laboratories. In one embodiment, the characterization of refinery feedstocks is via the use of EIS.



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