

SARChI Chair in Coal Research



Chair awarded:
2013 – 2022 (T2)

NRF Rated Established
Researcher (C1)

Prof. John Bunt

Faculty of Engineering

SARChI Coal Research Chair focus

(Value addition across the entire coal value chain)



(1) Fine coal processing

- (a) De-watering fundamentals
- (b) Beneficiation studies
- (c) Briquetting studies

(2) Coal conversion optimisation

- (a) Coal breakage studies
- (b) Kinetic / reactivity studies
- (c) Mineral behaviour

(3) Waste utilisation

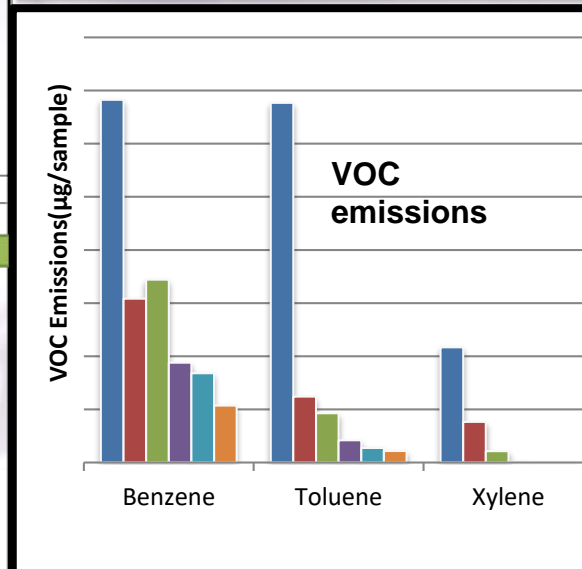
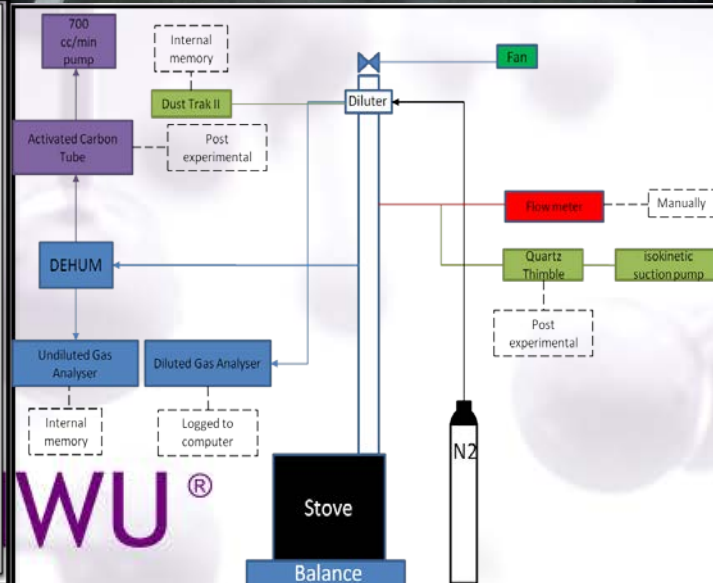
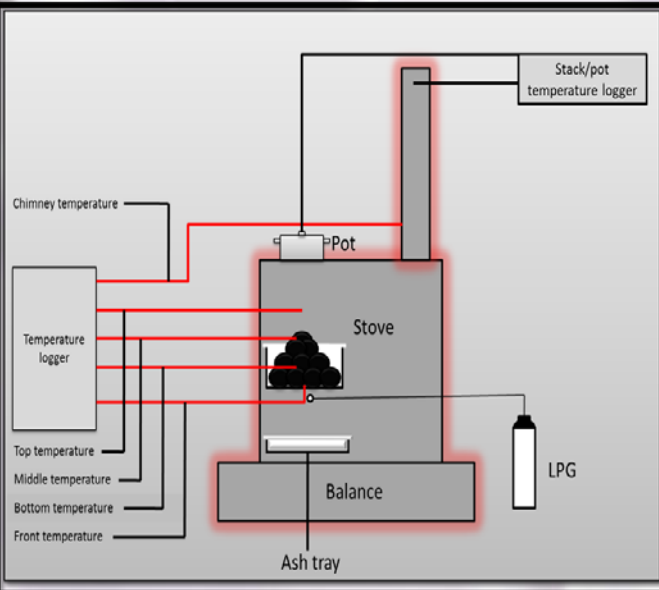
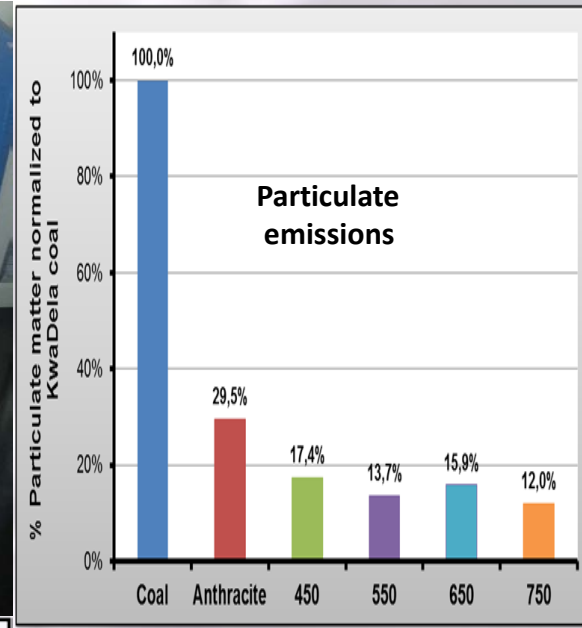
- (a) Ash value addition
- (b) CO₂ utilisation
- (c) AMD eradication

- (d) Smoke-less fuels
(community project)



Innovation, Engineering and Technology development and commercialisation

The use of low smoke fuel (partially de-volatilised coal) in order to reduce impact of emissions



Fine coal briquetting for gasification and combustion purposes



(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)
 (19) World Intellectual Property Organization
 International Bureau

(43) International Publication Date
 27 October 2016 (27.10.2016)

(10) International Publication Number
WO 2016/170439 A1

(51) International Patent Classification:
C10L 5/36 (2006.01) *C10L 5/44* (2006.01)

(21) International Application Number:
 PCT/IB2016/050646

(22) International Filing Date:
 8 February 2016 (08.02.2016)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
 2015/02744 22 April 2015 (22.04.2015) ZA

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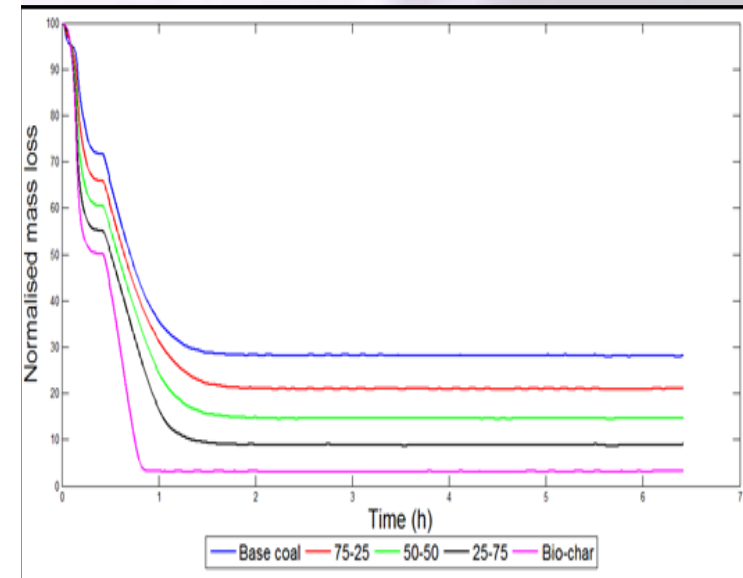
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD,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

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(54) Title: PRODUCTION OF A CARBONACEOUS FEEDSTOCK MATERIAL FROM A WASTE CARBON SOURCE

(57) Abstract: The present invention relates to a process for the production of a carbonaceous feedstock material from waste containing carbon sources. The present invention further relates to the use of the carbonaceous feedstock material in gasification processes whereby hazardous emissions of greenhouse gases and sulphur are significantly minimized and reaction rates are greatly enhanced. According to a first aspect thereof, there is provided a process for producing a carbonaceous feedstock material from waste containing carbon sources, the process including the steps consisting of: (i) introducing a source of biochar to a source of discard coal fines to form a bio-coal mixture; (ii) introducing a catalyst additive selected from the group consisting of a source of an alkali metal or a source of an alkaline earth metal to the bio-coal mixture; (iii) optionally, contacting the bio-coal mixture with a binder; and (iv) compacting the resulting mixture of step (ii) or (iii) to form one or more carbonaceous feedstock briquettes, the size of said briquettes having a dimension of at least 5 mm.

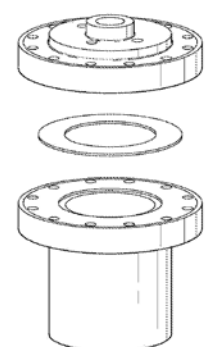
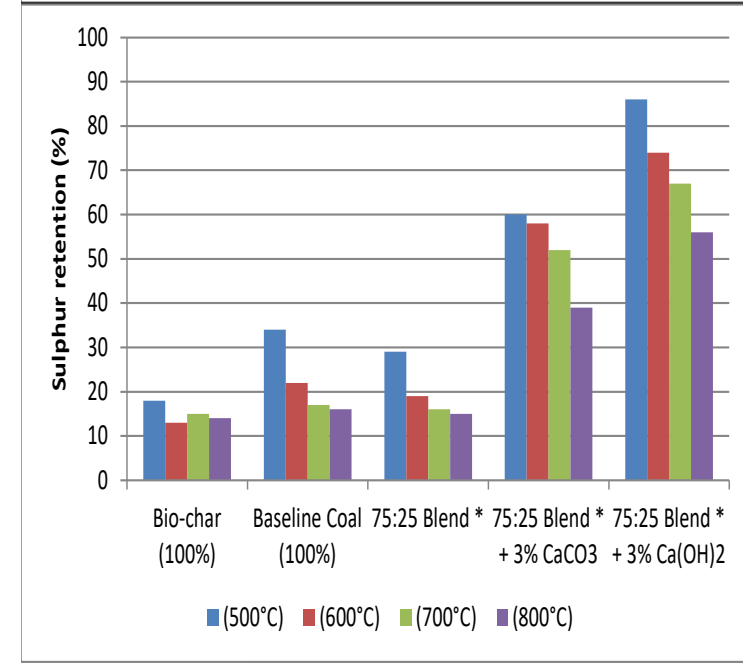


FIGURE 1



WO 2016/170439 A1

Cross-discipline NRF chair
 Holder Interaction (Coal Research
 and Biofuels)

SARChI Coal Research Chair Outputs (2013-2018)

