A Review Study on Chinese Domestic Gasification Technologies

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1. Introduction

After the import of foreign gasification technologies (e.g. Siemens GSP, GE Texaco, Shell, Lurgi) for (mainly) chemicals production in China, the own domestic gasification technologies are rapidly developed in the last decades. However, only a few information is available at the international level. The first part of this work reports the motivation regarding to national energy resources. The major part presents the development of entrained-flow, fluidized-bed and fixed-bed gasification technologies with respect to their technology owners, technical details and industrial applications. The technical information from the individual commercial technology owners will be highlighted if it is validated by operation experiences. In the final part, the authors will forecast possible future focuses of technology development.

2. Entrained-Flow Gasification Technologies

The report of entrained-flow gasifiers includes OMB, HT-L, Shenning, TPRI, TUOSG, MCSG, SE, JE, Jinhua, WHG, LongKing and Qiyao-Liuhua [1–3].
According to feed type and number of working burners, the industrial gasification processes can be categorized into:

- Slurry-feed, single burner (MCSG)
- Slurry-feed, multiple burners (OMB)
- Dry-feed, single burner (HT-L; Shenning; SE)
- Dry-feed, multiple burners (TPRI; TUOSG; WHG; JE)

The corresponding processes have been partially indicated above. The Fig. 1 shows the simplified gasifier geometry of selected entrained-flow processes. In the full paper and in the presentation, the authors will elaborate the individual process with their characteristics, process parameters, system behaviors and industrial applications.

3. Fluidized-Bed Gasification Technologies

The industrial Chinese fluidized-bed gasification processes will include Huang-tai, AFB, Tai-shi, Keda, KSY, Tian-wo, SG, Tsinergy, Ende and Changyuan [4,5].

4. Fixed-bed Gasification Technologies

The domestic moving-bed technologies including Sedin and Yun-Mei will be reported [6,7].

5. Conclusion and Outlook

The full paper will contain a systematic review concerning all types of gasification processes. Besides, the industrial applications based on published information will be tabularly summarized. The possible domestic future focuses will

be predicted according to governmental policies and environmental aspects.

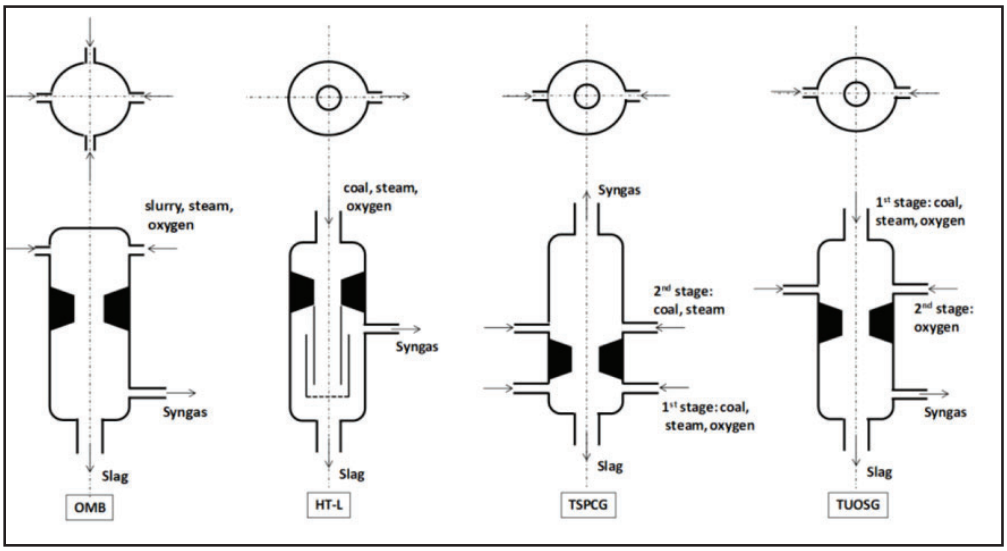

Fig. 1: Simplified Geometries of Chinese Domestic Entrained-Flow Gasifiers (work in progress)

6. Literature

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