

コンパクト同軸型石炭地下ガス化システムにおける 燃焼・ガス化の制御に関する研究

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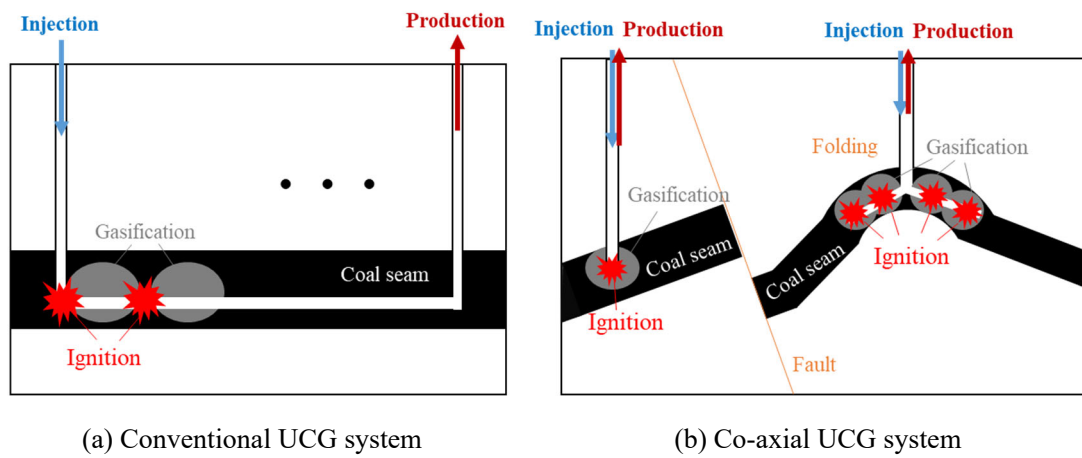
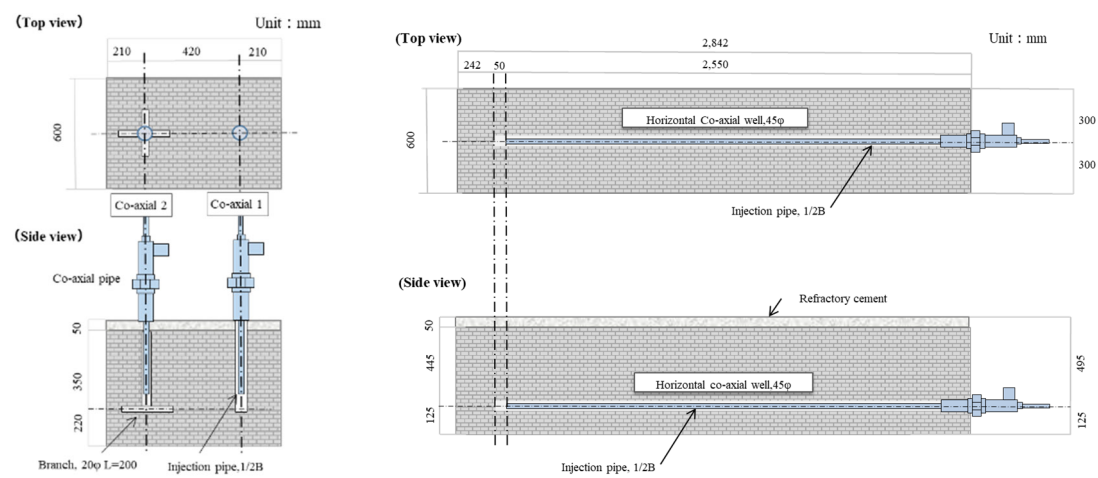
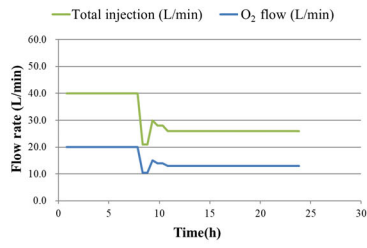


Fig.1 Image of UCG system

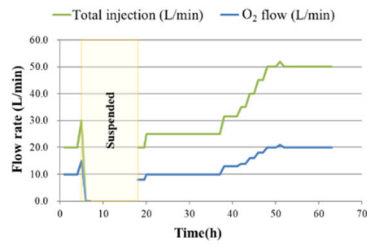


(a) Model UCG experiment in 2015 (b) Model UCG experiment in 2016

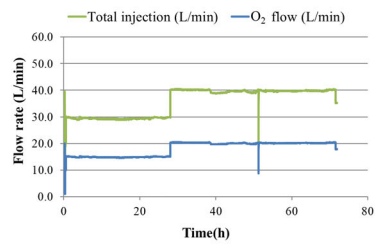
Fig.2 Diagram of UCG model experiment



(a) Co-axial 1

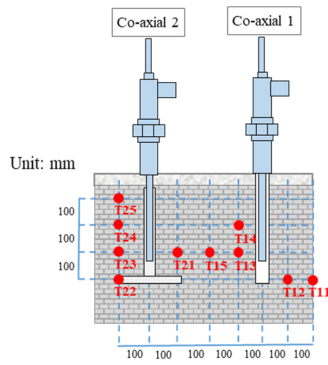


(b) Co-axial 2

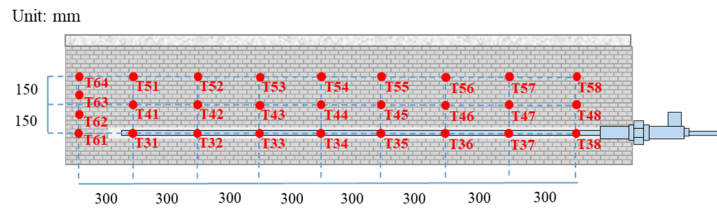


(c) Horizontal Co-axial

Fig.3 Injection conditions

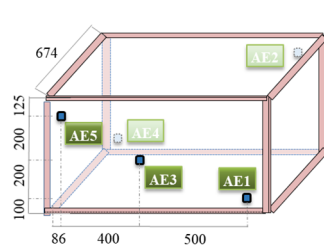


(a) Co-axial 1 and 2

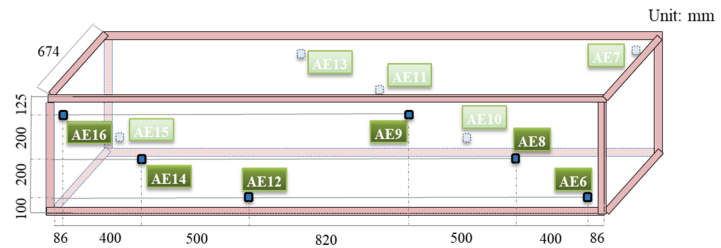


(b) Horizontal Co-axial

Fig.4 Distributions of thermocouples



(a) Co-axial 1 and 2



(b) Horizontal Co-axial

Fig.5 Distributions of acceleration transducers

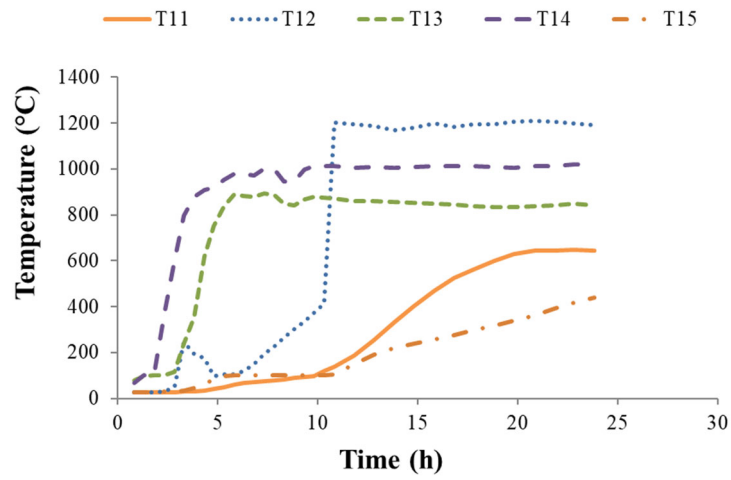


Fig.6 Results of temperature monitoring (Co-axial 1)

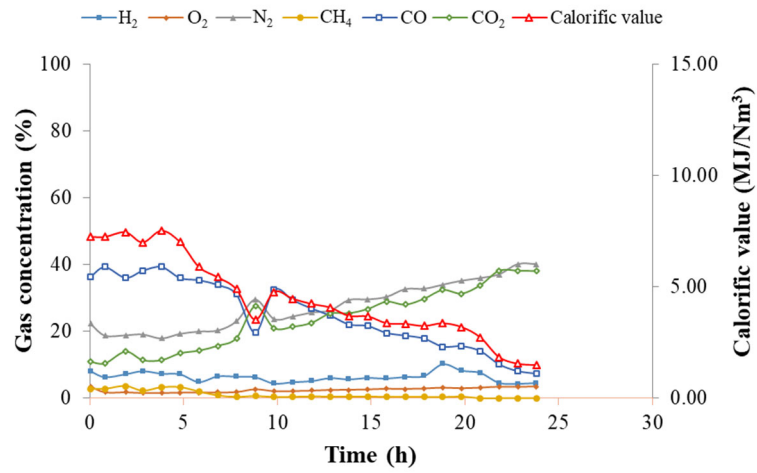


Fig.7 Main compositions and the calorific value of product gas (Co-axial 1)

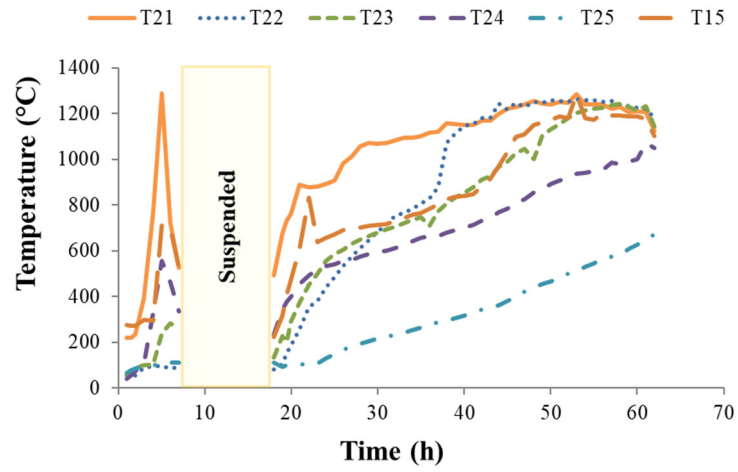


Fig.8 Results of temperature monitoring (Co-axial 2)

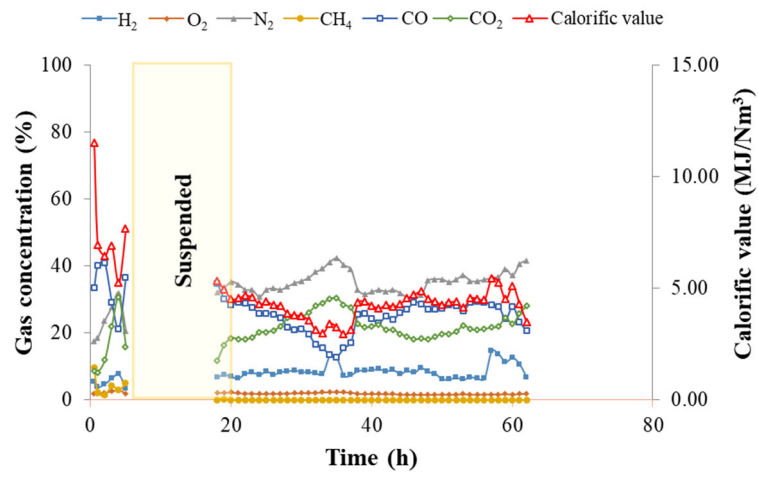
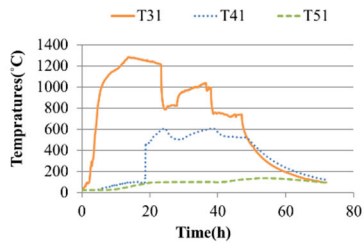
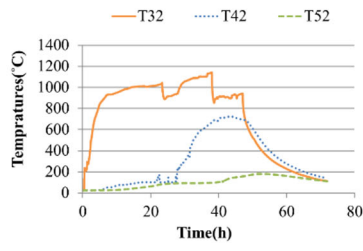


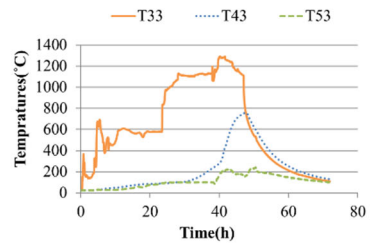
Fig.9 Main compositions and the calorific value of product gas (Co-axial 2)



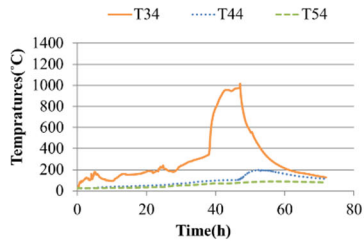
(a) T31~T51



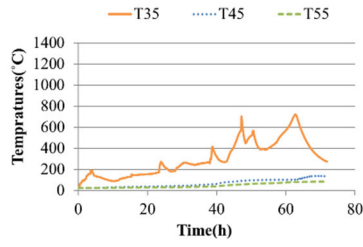
(b) T32~T52



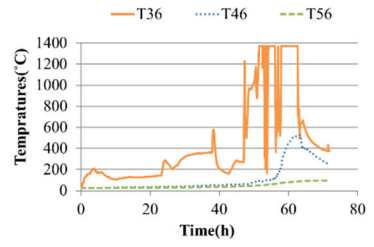
(c) T33~T53



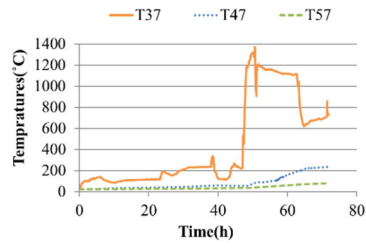
(d) T34~T54



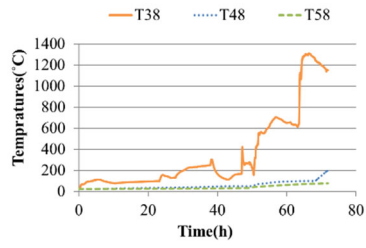
(e) T35~T55



(f) T36~T56



(g) T37~T57



(h) T38~T58

Fig.10 Results of temperature monitoring (Horizontal Co-axial)

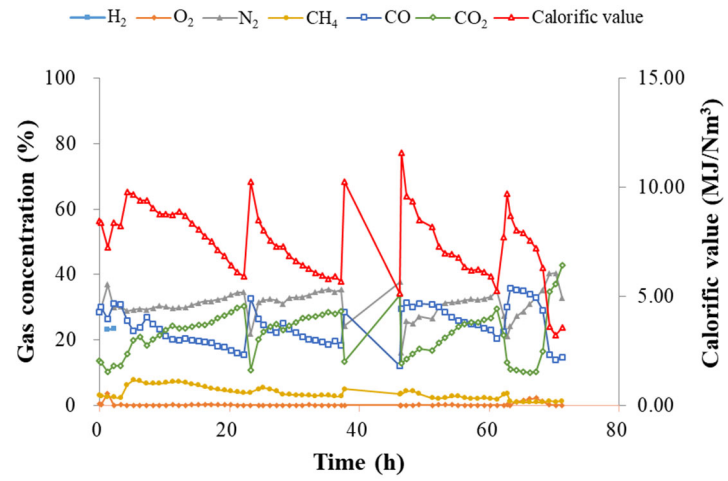


Fig.11 Main compositions and the calorific value of product gas (Horizontal Co-axial)

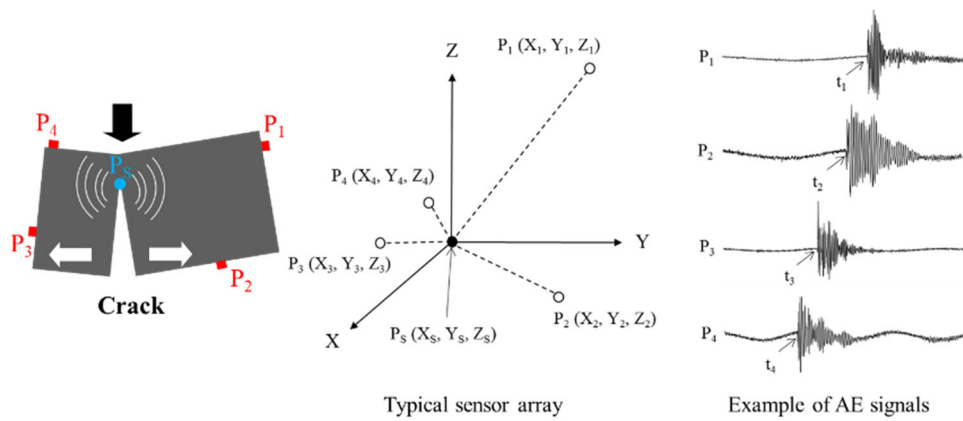


Fig.12 Typical sensor array and AE signals

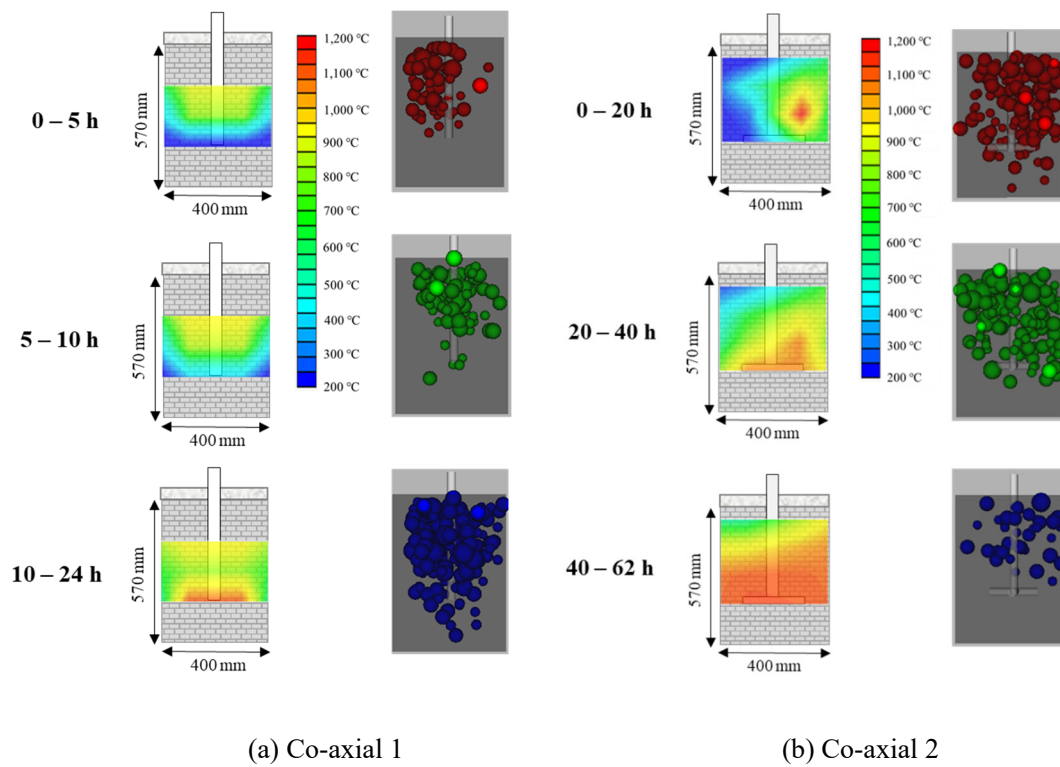


Fig.13 Compared results between maximum temperature and AE monitoring (Co-axial 1, 2)

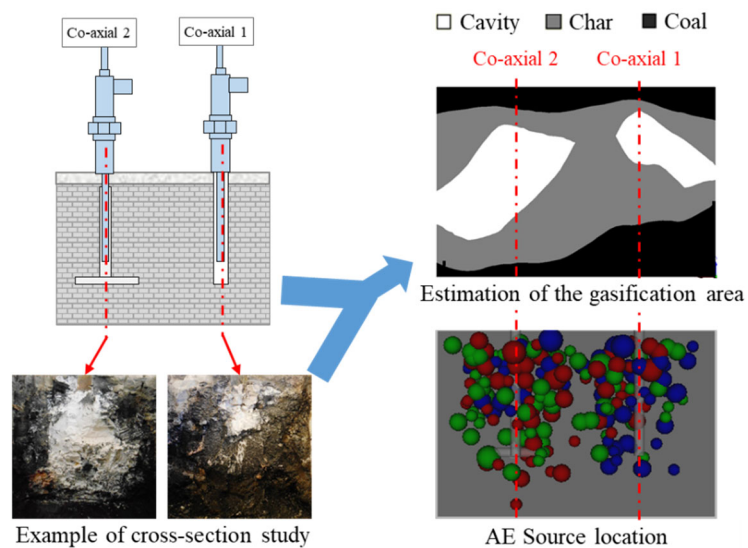


Fig.14 Compared results between estimation of post-gasification area and AE source location (right: Co-axial 1, left: Co-axial 2)

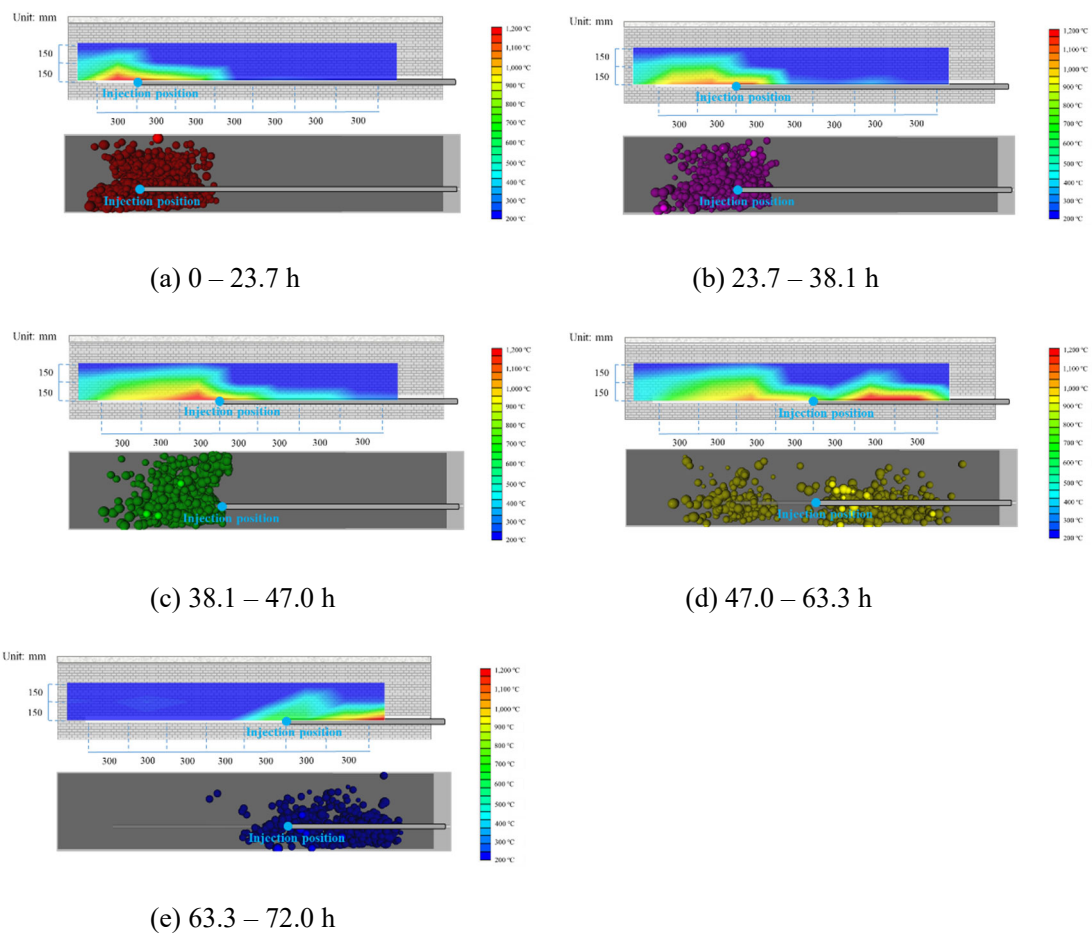


Fig.15 Compared results between maximum temperature and AE monitoring
(Horizontal Co-axial)

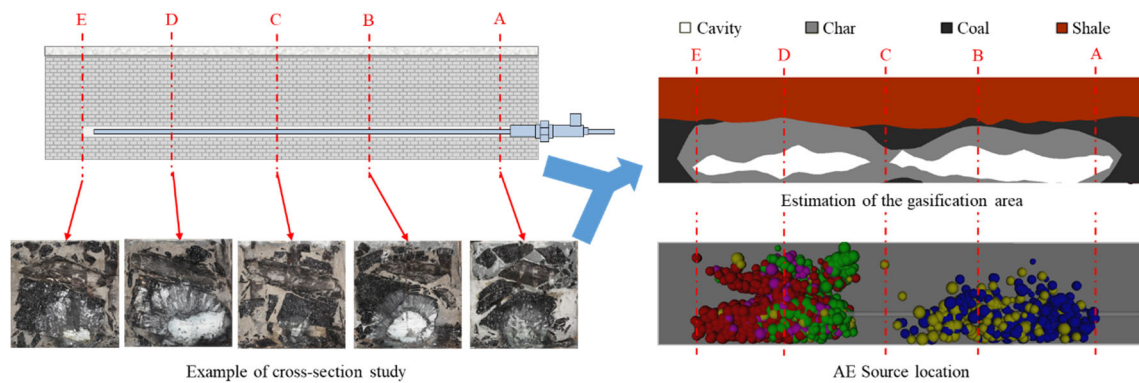


Fig.16 Compared results between estimation of post-gasification area and AE source
location (Horizontal Co-axial)