

1.The workstation of FLIR infrared thermal imager; 2. Infrared thermal imager; 3. Ceramic fiber cotton; 4. Stainless steel wire mesh; 5. Germanium glass window; 6. Stainless steel cylindrical protective; 7. Manhole; 8. Microwave shielding thermocouple; 9. SiC bed; 10. ceramic fiber plate; 11. Quartz crucible; Microwave magnetrons distributed at the 12 left, 13 bottom and 14 right of the resonant cavity.

FIGURE1. System setup for the measurement of temperature distribution of the bed surface in a microwave-assisted pyrolysis large-scale reactor.

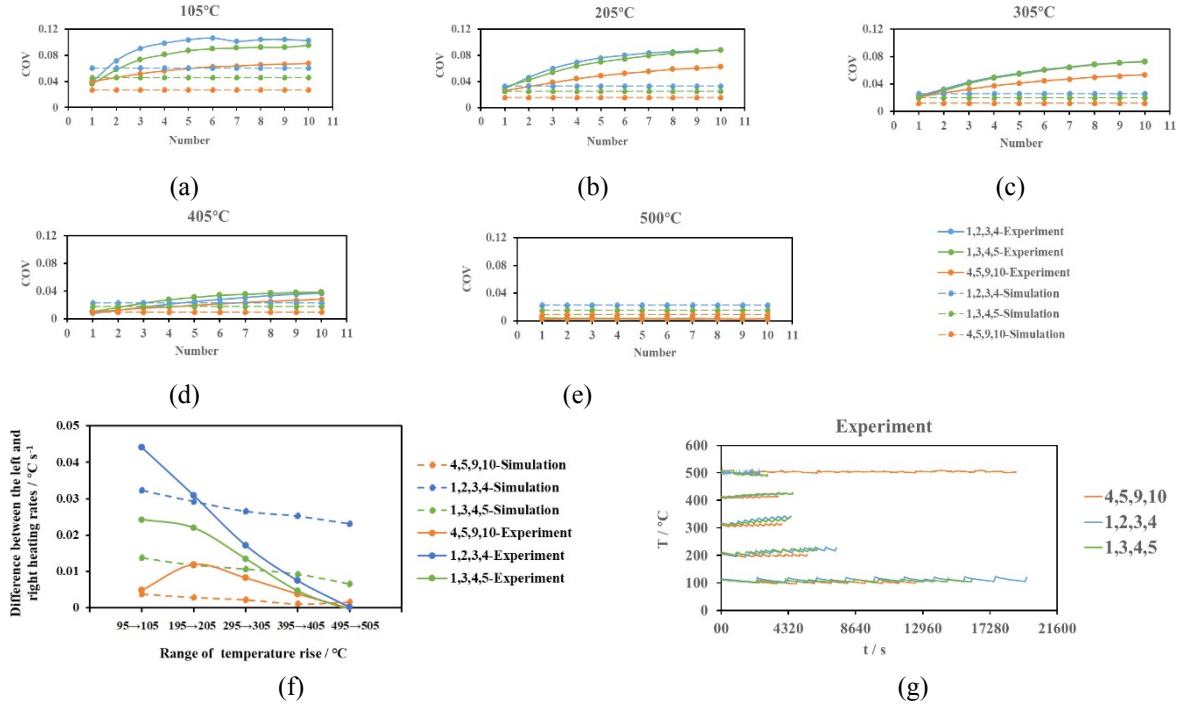


FIGURE 2. Effect of working magnetrons position on the heating of SiC bed: (a-e) COV of bed surface temperature distribution by experiment and simulation when the temperature monitored by the thermocouple continuously increased to 105, 205, 305, 405 and 500 $^{\circ}\text{C}$ for 10 times, respectively. (f) The difference between the left and the right heating rate of the bed surface with the temperature rise of 95 \rightarrow 105 $^{\circ}\text{C}$, 195 \rightarrow 205 $^{\circ}\text{C}$, 295 \rightarrow 305 $^{\circ}\text{C}$, 395 \rightarrow 405 $^{\circ}\text{C}$, and 495 \rightarrow 505 $^{\circ}\text{C}$ respectively obtained by simulation and experiment. (g) The average temperature of bed surface with time on stream determined by 10 times experiments when the temperature controlled by the thermocouple was 100, 200, 300, 400 and 500 $^{\circ}\text{C}$, respectively.