

Full-loop, lab-scale gasifier simulation with MFIX-DEM

Simulation contains over 1 million reacting particles coupled to a gas phase through interphase momentum, energy, and mass transfer.

Particles comprised of carbon, volatiles, moisture and ash

Gas comprised of O₂, CO, CO₂, CH₄, H₂, H₂O, N₂

Animation: (Left) Solids particles colored by temperature. (Right) Volume rendering of CO mass fraction. Grey surfaces indicate regions in the domain where the water-gas shift reaction is strong.

Graphs. (Left) Gas species composition and (Right) temperature at the outlet.

