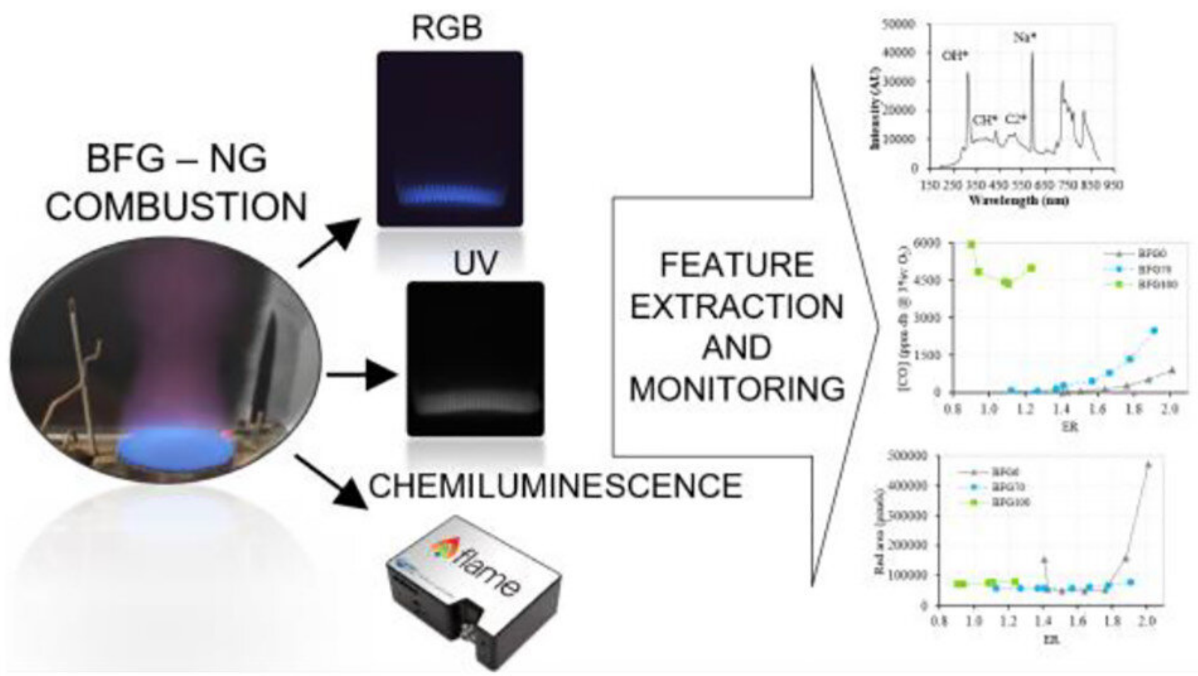
Blast furnace gas combustion: A sustainable alternative for the steel industry?

October 17 2022



Graphical abstract. Credit: *ACS Omega* (2022). DOI: 10.1021/acsomega.2c02103

Currently, energy-intensive industries are shifting their production and processes towards more sustainable models. Thus, industrial processes can increase their efficiency while reducing pollutant emissions. Several strategies are being promoted to reach these energy efficiency objectives, such as waste heat recovery, waste stream valorization and electrical flexibility.

Looking to the steel industry, multiple waste gas streams with calorific value are produced. One of these streams is the blast furnace gas (BFG), a by-product of the chemical reduction of iron developed in blast furnaces. BFG can be valorized through combustion for different processes and the steel industry is highly interested in making valorization happen within the same facility where it is produced. Nevertheless, the combustion of BFG in steelmaking processes faces several drawbacks and its implementation on an industrial scale requires a continuous control of the combustion due to the low calorific value of BFG.

A recent paper published in *ACS Omega* analyzes the combustion behavior and monitoring of BFG/CH4 blends in a laboratory premixed fuel burner. If, on the one hand, BFG combustion causes an increase in CO_2 and CO emissions, on the other hand, NO_x emissions decrease. The methodologies developed in this work were proven to be valuable alternatives with a high potential for monitoring the BFG cofiring in the steel industry.

More information: Pedro Compais et al, Optical Analysis of Blast Furnace Gas Combustion in a Laboratory Premixed Burner, *ACS Omega* (2022). DOI: 10.1021/acsomega.2c02103

Provided by Youris.com