



GAVIN CONFERENCES

# International Conference on Petrochemical Engineering

July 10-12, 2017 Dubai, UAE

## A cleaner diesel combustion. Is it possible?

**Rogério Jorge Amorim**

Pontifical University of Minas Gerais, Brazil

Diesel engines have been extensively used in Europe for passenger cars, light and heavy duty vehicles. A very strict regulatory is effective in Europe, US and Japan to have cleaner vehicles and reduced fuel consumption. As a combustion strategy for light loads, premixed combustion presents great results in terms of  $\text{NO}_x$  and Soot emissions. However, mid and high loads cannot take full advantage of this concept due to hardware limitations. Is there a way to obtain a Clean Diesel engine with a diffusive combustion? Based on recent research, it seems to be feasible to develop Diffusion-flame Low temperature combustion concept avoiding simultaneously  $\text{NO}_x$  and Soot emissions. The strategy is based mainly in a significant reduction of the equivalence ratio at the lift-off length cross section and the combustion temperature, maintaining the conventional mixing controlled diesel jet structure.