



## Novel Research & Processes

### **Fluidized bed gasifier for High ash Indian coal and petcoke**

BPCL Corporate R&D Centre along with Engineers India Ltd (EIL) have developed a novel fluidized bed gasifier for co-processing high ash Indian coal and petcoke to produce synthesis gas as product. Gasification of high ash Indian coal is challenging because of handling issues arising from high amount of inert ash (~40%) inherently present in Indian coals. In the past, many conventional gasifiers have failed to perform at its best when fed with high ash Indian coal as feedstock. The current gasifier scheme synergistically uses the low ash properties of petcoke along with high ash Indian coal to maximize yields and mitigate ash handling issues. BPCL CRDC, EIL along with M/s Thermax has put up a 150 kg/hr pilot plant gasifier to demonstrate this technology. Syngas clean up facilities are also built so that clean gas is produced which can be used for variety of applications such as methanol, DME or FT diesel production etc.

### **Novel Gasoline Sulphur Reduction Additive For Fluid Catalytic Cracking Unit (FCCU)**

A team of Scientist in BPCL's Corporate Research & Development Centre (CRDC) at Greater Noida has developed a cost effective novel Gasoline Sulphur Reduction Catalyst additive for FCCU. The production of this novel product is based on environment friendly and cost effective raw material. This catalyst reduces sulphur content in gasoline produced in FCCU. Currently this expensive catalyst is imported by many refineries in India which is manufactured by only few companies.

First successful commercial trial of this novel product that was manufactured in India, was completed at our Mumbai refinery during September to November 2014 in two dosage rate i.e. 10 and 15 wt%. Its performance is found to be superior to other's catalyst in terms of sulfur reduction in gasoline. There was no

dilution, yield variation and catalyst loss observed during the trial. BPCL CRDC has filed patents for this new product development in India, USA, Europe, Canada, China, Australia, Singapore, UAE & Oman. The product is now available for sale to other refineries at competitive price.

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