

International Conference on

PETROLEUM ENGINEERING

August 06-07, 2018 | Dubai, UAE

Innovative path-breaking “cold process” to manufacture sulphonating agents and sulphur - based chemicals

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Manufacture of sulphuric acid and sulphonating agents underwent revolutionary change as a result of the inventive contact process using Vanadium Pentoxide catalyst in the 1950's. The “single-contact single-absorption” process was widely used until the 1970's. The conversion efficiency of SO_2 to SO_3 was restricted to 96.5% resulting in stack emissions of 16 to 20 Kgs of sulphur dioxide per ton of acid produced. Global warming and environmental concern prompted further improvement by introducing DCDA, Double-Contact Double-Absorption process. In the DCDA process the product SO_3 was absorbed by introduction of Inter-Pass Absorption Tower (IPAT) keeping V2O5 contact process unchanged. Thus overall conversion efficiency was raised to 99.5 – 99.7 %, thereby reduced sulphur dioxide emissions below 4 Kgs per ton of acid produced. This is

today taken as an International Standard as recommended by Environmental Protection Agency of USA. Even so, at the current production level of over 150 million tons of sulphuric acid per annum, this results into over one million tons of acid rain per year! This acid rain has serious impact on flora and fauna as well as aquatic life. The path-breaking “Cold Process” invented and patented at the International Patent Agency in Geneva by Navdeep Enviro And Technical Service Pvt. Ltd, Mumbai (India) claims to produce sulphuric acid and sulphonating agents with zero emission of sulphur dioxide which totally eliminates acid rain. This paper outlines the techno economic features of the process giving cost effectiveness of reduced plant area, lower maintenance costs and higher cogeneration of steam.

Biography

Jayesh Matani is an engineer at Navdeep Enviro And Technical Services Pvt. Ltd. He has published more than 50 papers in reputed journals.

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