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ABSTRACT

The growth of the chemical industry has its roots in coal derived products. For many decades chemicals and coal were closely linked. This changed gradually with the advent of the commercial availability of crude oil and its derivatives. With subsequent increasing quantities of natural gas which became accessible, this added a further significant source of raw material for chemicals. The role of coal as raw material for the production of industrial organic chemicals thus declined with time, but the technologies which have been developed and which are still under development could well pick up in importance as the economic incentive to use coal rather than oil or gas might increase.

The technology developed for the production of chemicals from coal fall broadly into two categories: firstly the primary coal derived chemicals produced by pirolising or heating coal and condensing volatiles. (A variation of this is based on the extraction of coal chemicals.) Secondly coal can be gasified and the CO (and H₂) can be used as starting material for e.g. methanol, ammonia or Fischer-Tropsch products.

The focus in this paper is primarily on progress using the second route and examples of the production of industrial petrochemicals and possible future opportunities are presented.

The choice of coal or natural gas as a starting material for syngas production for petrochemicals is an economic consideration but as gas availability would be declining, coal as basis for petrochemicals will again gain in importance.