

Title:

A Process Using Heated And Pressurized Hydrogen In A Fluidized Bed To Produce High Grade Synthetic Crude Oil From Oil Shale, Oil Sands and Bitumen

Abstract: (Your abstract must use 10pt Arial font and must not be longer than this box)

Central to the process is the pressurized fluid bed reactor in which the feed is mixed, fluidized and heated with hydrogen. Conversion reaction occurs in a relatively low temperature non-combustion environment. The process has been demonstrated to extract and convert material such as oil sand, oil shale and liquid bitumen via hydrocracking and hydrogenation into hydrocarbon vapors and spent solids.

Hydrogen is used as the heat conveyor to the reactor, reactor bed fluidizing gas, and reactant. The process has the flexibility to use process off-gases and either supplemental gas or product oil, depending upon economic conditions for hydrogen make up and fuel. Combustion air for the heater and the associated hydrogen plant reformer is preheated by cooling the spent sand or shale discharged from the reactor.

Reactor overhead gases are cleaned of particulate solids in a hot gas filter, cooled and hydrocarbon products condensed and separated from the gas stream. The liquid product produced at this stage may be lightly hydro-treated to produce a very low sulfur high grade synthetic crude oil. Use of hydrogen in the initial phase of the process greatly enhances the quality of the product and reduces the need for extreme hydrotreating in downstream operations.

Pilot plant tests have demonstrated that the process has produced yields of 51.5 gal/ton from Colorado shale (with a Fischer Assay of 28.4 gal/ton), and 15.4 gal/ton from Kentucky shale (with a Fischer Assay of 7.7 gal/ton). Tests have demonstrated effective fluidization using hydrogen with extremely high efficiency results.

Important notes:

Do **NOT** enter author and affiliation information on this document. You will be able to enter this information online when you submit the abstract.

Do **NOT** write outside the boxes. Any text or images outside the boxes **will** be deleted.

Do **NOT** alter the structure of this document. Simply enter your title and abstract in the boxes. The document will be automatically processed – if you alter its structure your submission will not be processed correctly.