



## Enhanced Oil Recovery with Complex Nano-Fluids

**UW ID: 14-094**

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**Patent Status:**

Utility Patent Issued

### Description of Technology

Enhanced oil recovery consists of injecting fluids into injection wells in an oil reservoir to drive the oil towards production wells for increased oil recovery. The present invention is an enhanced oil recovery method using complex nanofluids. The complex nano-fluid (CnF) is a standalone product that includes surfactants and solvents. Evidence shows that the fluid has the potential recovery rate of 89%. Each of the chemicals within the CnF are biodegradable in nature and constitute an ethical and environmentally-friendly approach to advanced production methods.

The present invention uses a recovery process unique to conventional oil recovery practices. The complex nano-fluids are injected into the oil reservoir by a separate injection well in order to sweep the oil into a nearby production well. In conventional applications, recovery is restricted to stimulation of production from a single well. The present inventions uses the complex nano-fluid to reduce the capillary forces that are trapping the oil in the reservoir, rather than removing impediments to flow and increasing permeability in treated areas which is done conventionally.

### Applications

This oil recovery process can be used by oil companies for improved oil recovery.

### Features & Benefits

- Increased oil recovery with rates as high as 89%
- Use of biodegradable & thermodynamically stable chemicals

### Marketing Opportunities

Increased global energy consumption has resulted in an escalated demand for hydrocarbons. As known conventional reservoirs are depleted, the need for unconventional production methods and enhanced recovery processes are intensified.



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