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(54) Title of the invention : MULTI-STAGE FLUID INJECTION SYSTEM INTEGRATED WITH ARTIFICIAL INTELLIGENCE FOR ENHANCED OIL RECOVERY

<p>(51) International classification :E21B0043160000, C09K0008584000, A61M0005200000, E21B0043260000, E21B0043200000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)CMR COLLEGE OF ENGINEERING & TECHNOLOGY Address of Applicant :KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401. Hyderabad ----- -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr. P. RAVI KUMAR Address of Applicant :Professor Mechanical Engineering CMR COLLEGE OF ENGINEERING & TECHNOLOGY KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401 Hyderabad ----- -----</p> <p>2)Dr. K. SRINIVASA RAO Address of Applicant :Professor Mechanical Engineering CMR COLLEGE OF ENGINEERING & TECHNOLOGY KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401 Hyderabad ----- -----</p> <p>3)Mr. SANTHOSH KULKARNI Address of Applicant :Associate Professor Mechanical Engineering CMR COLLEGE OF ENGINEERING & TECHNOLOGY KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401 Hyderabad ----- -----</p> <p>4)Mr. M. MUNEEESH BABU Address of Applicant :Associate Professor Mechanical Engineering CMR COLLEGE OF ENGINEERING & TECHNOLOGY KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401 Hyderabad ----- -----</p> <p>5)Mr. P. SRIDHAR Address of Applicant :Associate Professor Mechanical Engineering CMR COLLEGE OF ENGINEERING & TECHNOLOGY KANDLAKOYA, MEDCHAL ROAD, HYDERABAD, TELANGANA, INDIA, 501401 Hyderabad ----- -----</p>
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(57) Abstract :
METHOD AND SYSTEM FOR MULTI-STAGE FLUID INJECTION SYSTEM FOR ENHANCED OIL RECOVERY ABSTRACT The present invention pertains to an integrated multi-stage fluid injection system, incorporating artificial intelligence, designed for enhanced oil recovery. The system encompasses a variety of injection stages configured to introduce fluids into a wellbore, thereby amplifying oil production from the reservoir. Each injection stage features a fluid injection device programmed to inject fluid into the wellbore at specified pressure and flow rate parameters. The arrangement of injection stages follows a carefully devised sequence, where fluids introduced in earlier stages play a pivotal role in priming the reservoir for subsequent injections. Additionally, the system integrates a control system, which, in real-time, monitors and adapts the injection parameters for each stage based on data retrieved from sensors strategically positioned in the wellbore. The overarching design of the system aims to elevate the efficiency and effectiveness of enhanced oil recovery processes, concurrently mitigating the risk of reservoir damage.

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