



**NATIONAL ENERGY TECHNOLOGY LABORATORY**



## **NETL Oil Technology R&D Portfolio**

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**Unconventional Resources Technology Advisory Committee**

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# Current Portfolio Structure

- Research focus “Next Generation” CO<sub>2</sub> EOR R&D
- Eleven on-going projects
- Total value of \$20.8 million (average research partner cost share of 33%)
- Spread across four general topical needs:
  - Mobility Control Enhancement
  - Improved Flood Conformance
  - Monitoring Technology Enhancement
  - Planning and Evaluation Enhancement

## Current Projects Focus Matrix

Project	Performer	Improved Mobility Control	Improved Flood Conformance	Enhanced Monitoring	Enhanced Modeling, Planning	Demo to Accelerate Application
SPI Gels	Impact Tech.	<b>X</b>	<b>X</b>			<b>X</b>
Nanoparticle Foams 1	U. Texas (Austin)	<b>X</b>	<b>X</b>			<b>X*</b>
Optimize ROZ	U. Texas (PB)			<b>X</b>	<b>X</b>	<b>X</b>
Seismic Monitoring	White River Tech.			<b>X</b>	<b>X</b>	<b>X</b>
Surfactant Foam	U. Texas (Austin)	<b>X</b>	<b>X</b>			<b>X*</b>
Nanoparticle Foams 2	New Mexico Tech	<b>X</b>	<b>X</b>			
Advanced Simulator	U. Texas (Austin)				<b>X</b>	
Planning Software	NITEC				<b>X</b>	

*\* Industry field test planned, not part of project*

## Current Projects Focus Matrix (con't)

Project	Performer	Improved Mobility Control	Improved Flood Conformance	Enhanced Monitoring	Enhanced Modeling, Planning	Demo to Accelerate Application
Surfactant Concepts	NETL	<b>X</b>	<b>X</b>		<b>X</b>	<b>X*</b>
CO <sub>2</sub> Thickeners	U. Pittsburgh	<b>X</b>	<b>X</b>		<b>X</b>	<b>X*</b>
Citronelle Demo	U. Alabama Birmingham					<b>X</b>

*\*Industry field test planned, not part of project*

# Current CO<sub>2</sub> EOR Projects Listing

- **Improved Mobility Control in CO<sub>2</sub> Enhanced Recovery Using SPI Gels (Impact Technologies LLC)**
- **CO<sub>2</sub>-EOR and Sequestration Planning Software (NITEC LLC)**
- **Case Studies of the ROZ CO<sub>2</sub> Flood and the Combined ROZ/MPZ CO<sub>2</sub> Flood at The Goldsmith Landreth Unit, Ector County, Texas (U. Texas – Permian Basin)**
- **Engineered Nanoparticle-Stabilized CO<sub>2</sub> Foams to Improve Volumetric Sweep of CO<sub>2</sub> EOR Processes (U. Texas - Austin)**
- **Novel CO<sub>2</sub> Foam Concepts and Injection Schemes for Improving CO<sub>2</sub> Sweep Efficiency in Sandstone and Carbonate Hydrocarbon Formations (U. Texas - Austin)**
- **Nanoparticle-Stabilized CO<sub>2</sub> Foam for CO<sub>2</sub>-EOR Application (New Mexico Institute of Mining and Technology)**
- **Development of an Advanced Simulator to Model Mobility Control and Geomechanics During CO<sub>2</sub> Floods (U. Texas - Austin)**
- **Novel Surfactant-Based Concepts for Improved Mobility Control of CO<sub>2</sub> Floods (NETL-RUA)**
- **Small Molecule Associative Carbon Dioxide (CO<sub>2</sub>) Thickeners for Improved Mobility Control (University of Pittsburgh)**
- **Real Time Semi-Autonomous Geophysical Data Acquisition and Processing System to Monitor Flood Performance (White River Technologies , Inc.)**
- **Carbon-Dioxide-Enhanced Oil Production from the Citronelle Oil Field in the Rodessa Formation, South Alabama (University of Alabama at Birmingham)**