Problem/Opportunity

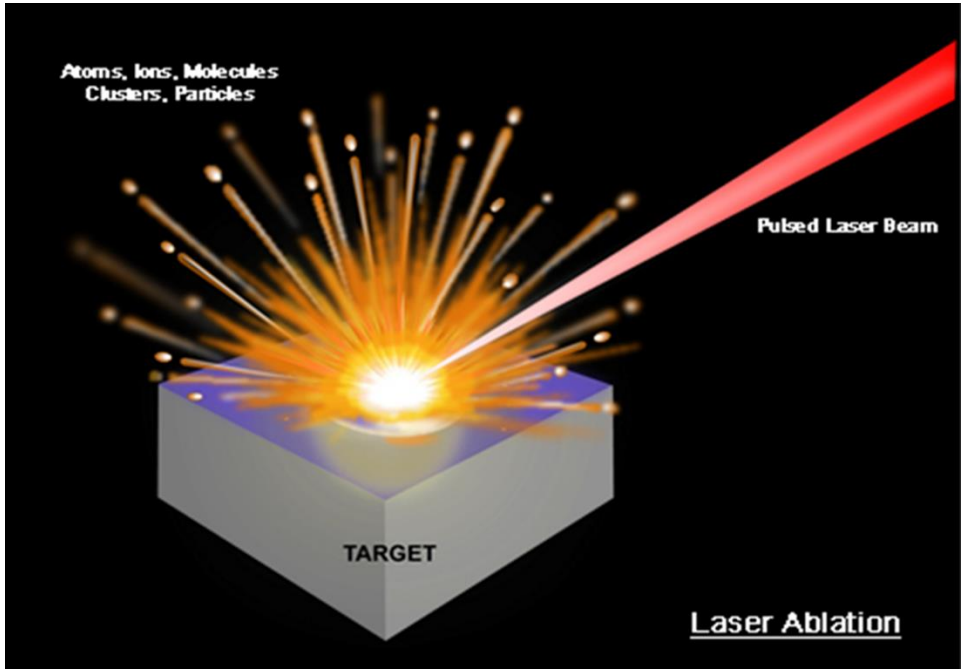
- **The Problem — Environmental Contamination**
- **Our Solution**
  - A way to measure subsurface gases, liquids, and solids **at subsurface conditions** (elevated temperature and pressure)
- **What situation ("pain") will we solve?**
  - Current sampling and analysis is labor intensive ($$$) and significantly changes the sample by cooling and depressurizing
  - Time waiting on analysis ($$$)
- **Why is this a game-changing technology/process?**
  - **No** sample collection and **No** sample preparation
  - Continuous monitoring of an extreme environment
  - See changes in down hole fluid chemistry prior and post injection/fracturing
- **Why does the situation exist?**
  - Current analysis technology is **NOT** amenable to harsh environments (Lab only)

Competing Technologies vs Ours

- **Gas Chromatography-Mass Spectrometry**
  - Gas phase only, Lab operations and conditions only
- **Cavity Ring Down Spectroscopy**
  - Gas phase only, few ruggedized models available
- **Portable Raman**
  - Solids only, few ruggedized models available
- **Handheld LIBS**
  - Solids only, limited sensitivity

Our Technology's Advantages

- **Gas, liquid and solid phases**
- **Field operation**
- **Rugged enough for downhole conditions**
- **High sensitivity**
- **Lower price and operating costs**



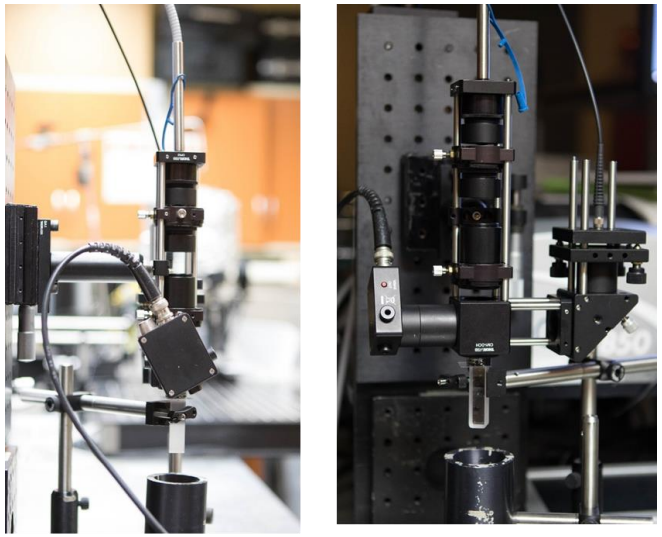
Industry Partners, Customer Research

- **Core Markets:**
  - Oil & gas exploration companies, landowners, regulatory agencies, and municipalities (e.g., water treatment)
- **Other Potential Customers**
  - Industries that need to monitor their waste/produced water and/or environmental impacts (e.g., power generation, cement and steel manufacturing, mining)
- **Market Information**
  - **Water Quality Monitoring Equipment Market** is projected to reach $5 Billion by 2023 expanding at a CAGR of 5.02%.
  - **Global Environmental Monitoring Market** is forecast to reach $19.6 Billion by 2021
  - **Global Market for Advanced Exploration and Downhole Technology** is set to reach $233 Billion by 2021

Commercialization Plan

- **Customers would include:** Regulatory Agencies, Exploration Companies, Municipalities, Land Owners, REE refineries
- **Adoption drivers**
  - Regulatory drivers/Mandatory monitoring prior and post activity
  - Ease of use, low cost, high data quality
- **Key tests and trials**
  - Prototype validated in lab; TRL 6-7
  - Fieldable prototype under construction
- **Estimated price of product**
  - Will depend on number of sensor units
  - 8 sensor unit system < $100k
- **Intellectual property status**
  - U.S. Patent 9,548,585 - 2017
  - U.S. Patent 9,297,696 - 2016
  - U.S. Patent 8,786,840 - 2014
- **What we need at this point**
  - Currently seeking a licensing/commercialization partner who has the ability to manufacture and market this product from field validation through customer delivery.

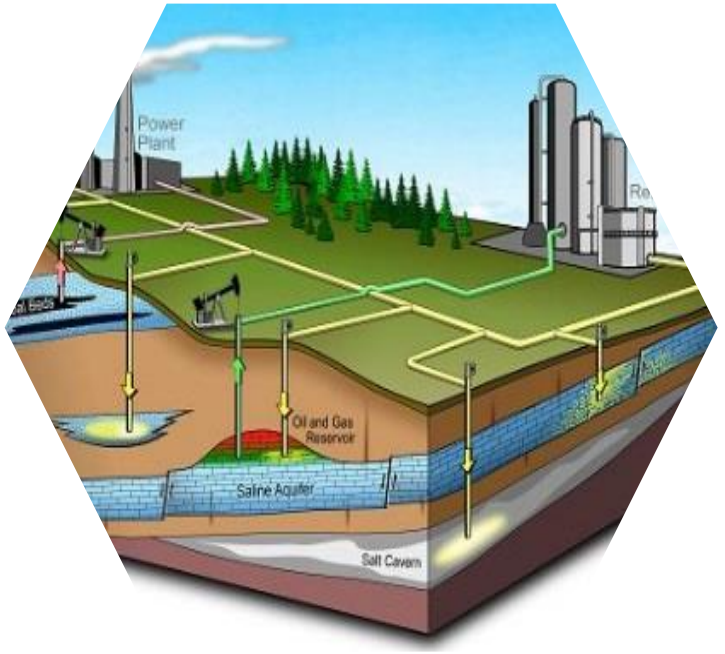
Current Prototype



Side view Front view

Vision Statement

- Our Technology Will:
  - Allow industrial customers to comply with environmental regulations
  - Allow customers to identify problems early, allowing for a rapid response and lower mitigation costs
  - Protect the environment
  - Safeguard society



Everybody Loves
Clean Air, Water, and Soil