

Peter Griffin Smith Jr., Ph.D.
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Objective: Experienced researcher and engineer seeks position related to chemistry or engineering.

Career Summary: Significant accomplishments in laboratory research and in engineering of oil and gas reservoirs. Formulated new compositions of injection water and directed laboratory tests for effectiveness. Broad experience applying reservoir engineering including simulation models for scoping new recovery processes, model calibration to laboratory and field measurements, due diligence for asset transfer, evaluation for asset acquisition, management and optimization of world-class Africa reservoirs, development of workflows for low-permeability reservoirs, and comparison of simulation software capabilities. Led safe operations in laboratory and office environments.

- Developed new process to speed evaluation of unconventional oil assets by up to 10x. Completed study 40% under budget.
- Formulated new chemistries for enhanced recovery processes. Named in three granted US patents: 8656996, 8657000, and 8739869.

Critical Skills:

- Instrumental analysis, e.g. TEM, GC/MS, LC, UV-VIS, DLS, IFT, DP-OCT, DSC, TGA, spectroscopy, fluorescence, turbidity, and electrophoresis
- Structure-property relationships
- Surface and interfacial chemistry
- Surface chemistry of metal oxide powders, including dispersibility coatings and testing
- Colloids (emulsions and particle dispersions)
- Design of surfactants and other interfacially active molecules
- Polymer chemistry and engineering (thermoplastic and thermoset resins)
- High-pressure equipment and relief systems
- Thermodynamic (PVT) property modeling
- Reservoir simulation, e.g. CMG IMEX, GEM, and CMOST, and Kappa Ecrin suite
- Engineering of oil and gas reservoirs, including EOR and low permeability
- Production analysis (e.g. IHS Harmony)
- Microsoft Windows and Office software

Professional Experience:

ExxonMobil Upstream Research Co., Houston, TX

2006–2016

Engineering Associate

2012–2016

Reservoir engineering in low-permeability fields, supporting asset development and acquisition. Worked in closely integrated teams applying reservoir simulation, completions engineering, data analytics, and geoscience. Improved process for model calibration, showing importance of expanded input parameter space and of data integration.

- Forecasted performance for evaluations of two major Canadian properties (600,000 acres).
- Supported development decisions through improved modeling of low-permeability oil reservoirs (\$2,000,000,000 investment in Bakken field).

Research Specialist

2010–2012

Applied reservoir simulation to improve technical basis for opportunity evaluations of gasflooding, polymer flooding, coreflooding, and novel tight gas recovery processes.

- Achieved drillwell approval for offshore Angola well (\$70,000,000 decision).

Senior Research Engineer

2006–2009

Oversaw laboratory research of light and heavy oil recovery, developing new recovery processes. Reviewed designs of equipment, including pressure relief systems, as part of Design Safety Committee. Fluid property prediction, including calibration to laboratory measurements and correction for contamination.

- Improved technical basis for developing Gulf of Mexico and Middle Eastern fields by fluid property modeling (\$4,000,000,000 investment in Julia field).
- Safety leader of the year for Reservoir Division.

The University of Texas at Austin, Austin, TX 2000–2006
Graduate Research Assistant
Researched microemulsions, emulsions, and particle dispersions in high-pressure liquid and supercritical CO₂ (5000 psi / 35 atm) and other fluids. Designed polymeric and ionic surfactants. Created electrophoresis and laser diffraction measurement methods.

- Expanded the state of the art of research of dispersions in non-polar fluids.
- Published 4 original research articles in peer-reviewed journals.

Graduate Teaching Assistant
Instructed students in courses: thermodynamics and unit operations special projects lab.

The Georgia Institute of Technology, Atlanta, GA 1998–2000
Researcher
Laboratory analysis of organic synthesis reactions in near-critical water.

Union Carbide Polymers Research and Development Dept., Somerset, NJ 1998
Intern
Comprehensive analysis of 16 years of product test data.

- Identified important performance factors and determined test limitations.

Texaco Fuels and Lubricants Technology Dept., Port Arthur, TX 1997
Intern
Laboratory analysis to support product quality, including startup of catalytic dewaxing unit.

Education:

The University of Texas at Austin 2006
Ph.D. Chemical Engineering (GPA 4.00/4.00)
Dissertation: Stabilization of Dispersions in Carbon Dioxide and in Other Low-Permittivity Media.

- National Science Foundation Graduate Research Fellowship.
- Represented school through community outreach (Explore UT).

The Georgia Institute of Technology 2000
B.S. Chemical Engineering (GPA 4.00/4.00)
Certificate in Organic Chemistry and Biochemistry, and Certificate in Economics

- Phi Kappa Phi Scholarship Cup (equivalent of valedictorian).
- President's Scholar with Faculty Honors every term.

Brookwood High School, Snellville, GA 1996

- Valedictorian and SAT score 1600/1600.

Distinctions:

- US National Chemistry Olympiad Team and Study Camp. 1996
- Eagle Scout with three palms, Boy Scouts of America, Troop 65. 1992

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