

## TIANGUANG FAN

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### Professional Summary

Research interests focus on enhanced oil recovery (EOR), oil and brine chemistry, the impact of asphaltene instability on flow assurance.

### Working Experience

05/99-01/01 **Senior Lab Associate**

02/01-12/17 **Research Chemist**

01/18-present **Research Scientist/Section Head**

PRRC, New Mexico Tech, Socorro

- Maintains and operates labs in support of research efforts of the Petrophysics group.
- Crude oil crude oil fraction and chemical analysis including SARA, hydrocarbon composition, acid and base number, molecular weight, viscosity, density, refractive index, etc.
- Water/oil interfacial phenomena and surface chemistry study including interfacial tension, surface energy, contact angle, and Zeta potential, etc. Crude oil/brine/rock wettability study on flat substrates and in reservoir cores at different temperatures and pressures.
- Polymer core flooding and polymer rheology in porous media.
- Asphaltene onset study and deposition in capillary tubing. Asphaltene instability evaluation and phase behavior at reservoir conditions and its impact on flow assurance.

02/98-05/99 **Senior Chemical Lab Associate**

NM Bureau & Mines, New Mexico Tech, Socorro

- Water analyses including major cations, anions, trace metals, pH and conductivity, alkalinity, and TOC etc., by using EPA methods.
- Structural and compositional analyses of geological materials by using X-ray Diffractometry (XRD), X-ray fluorescence (XRF), and Scanning Electron Microscopy (SEM) techniques.
- Quantitative analyses of mineral samples by using wet chemistry, Atomic Absorption (AA), and ICP-Mass spectroscopy techniques.

08/95-12/97 **Graduate Research Assistant:**

Dept. of Chemistry, New Mexico Tech, Socorro

- Degradation studies of hazardous chlorinated-organic vapors by using Titania (TiO<sub>2</sub>) mediated photocatalysis and packed-bed absorption.
- Synthesis and bio-degradation studies of lignin-styrene graft copolymer.

08/88-07/95 **Research Engineer**

Lucky Photographic Materials Co., Shenyang, China

- Development of new photolithography and etching processes for printed-circuit board fabrication.
- Photoresists characterization and their coating and development studies.
- Development of silver halide photographic emulsions for He-Ne laser film.
- Development of high-chloride emulsions with high contrast and developing speed in color photographic paper.

07/86-07/88 **Research Chemist**

Shenyang Institute of Chemical & Technology, Shenyang, China

- Synthesis studies of polymer PMMA (Poly Methyl Methacrylate) as one-component DUV positive photoresist and diazoquinone/novolac materials as two-component positive photoresists in the photolithography process of microelectronics.

### Education

08/95-12/97: M. S. in Chemistry, New Mexico Tech, Socorro, NM, USA

09/82-07/86: B. S. in Photographic Material Engineering,  
East China University of Chemical Technology, Shanghai, China