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**Name: Weian Huang**

**Academic title:** Professor

**Research Area:** Oil and Gas Well Chemistry and Engineering

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**Research Interests:**

1. Environmental protection method and technology of Oil and gas field

2. Theory and technology of unconventional oil and gas drilling fluid

3. Theory and method of performance control of drilling fluid in high-temperature and deep Wells

4. Well wall stability theory and technology

5. Reservoir damage mechanism and protection method

6. Basic theory and technology of drilling fluid in Marine deep water and natural gas hydrate reservoir

**Courses Offered:**

Oilfield Chemistry

**Scholarly Activities**

**-Publications：**

1. Huang W\*, Lei M, Wang J, et al. Method and Mechanism of Regulating Rheological Properties of Water-Based Drilling Fluid by High-Frequency and High-Voltage Alternating Current Electric Field [J]. SPE Journal, 2020, 25(5): 2220-2233.

2. Huang W\*, Lei M, Li G, et al. Surface coating on solidified water‐based drilling waste materials and its mechanism for resource reuse [J]. Journal of Chemical Technology and Biotechnology, 2020, 95(8): 2149-2158.

3. Lei M, Huang W\*, Sun J\*, et al. Synthesis of carboxymethyl chitosan as an eco-friendly amphoteric shale inhibitor in water-based drilling fluid and an assessment of its inhibition mechanism [J]. APPLIED CLAY SCIENCE, 2020, 193: 105637.

4. Lei M, Huang W\*, Sun J\*, et al. Synthesis, characterization, and performance of carboxymethyl chitosan with different molecular weight as additive in water-based drilling fluid [J]. JOURNAL OF MOLECULAR LIQUIDS, 2020, 310: 113135.

5. Li X, Huang W\*, Sun J\*, et al. Wettability alteration and mitigating aqueous phase trapping damage in tight gas sandstone reservoirs using mixed cationic surfactant/nonionic fluoro-surfactant solution [J]. Journal of Petroleum Science & Engineering, 2020, 195: 107490.

6. Huang W\*, Li X, Qiu Z, et al. Inhibiting the surface hydration of shale formation using preferred surfactant compound of polyamine and twelve alkyl two hydroxyethyl amine oxide for drilling [J]. Journal of Petroleum Science & Engineering, 2017, 159: 791-798.

7. Lei M, Huang W\*, Li N, et al. The damage mechanism of oil-based drilling fluid for tight sandstone gas reservoir and its optimization [J]. Journal of Petroleum Science & Engineering, 2017, 158: 616-625.

8. Weian Huang\*, Yee-Kwong Leong, Ting Chen, Pek-Ing Au, Xianhua Liu, Zhengsong Qiu. Surface chemistry and rheological properties of API bentonite drilling fluid: pH effect, yield stress, zeta potential and ageing behaviour [J]. Journal of Petroleum Science and Engineering, 2016, 146: 561-569.

9. Huang W\*, Lei M, Qiu Z, et al. Damage mechanism and protection measures of a coalbed methane reservoir in the Zhengzhuang block [J]. Journal of Natural Gas Science & Engineering, 2015, 26:683-694.

10. Huang W\*, Zhao C, Qiu Z, et al. Synthesis, characterization and evaluation of a quadripolymer with low molecular weight as a water based drilling fluid viscosity reducer at high temperature (245 °C) [J]. Polymer International, 2015, 64(10):1352-1360.

**-Research Project：**

1. Development and action mechanism of environmentally friendly drilling oil plugging agent with temperature switch effect, National Natural Foundation of China.

2. Research on chemical and physical methods of constant rheological regulation of Marine deep water-based drilling fluid, National Nature Foundation of China.

3. Mechanism of action and regulation method of wellbore working fluid and natural gas hydrate reservoir, National Natural Foundation of China.

4. Research on the mechanism and new methods of shallow well wall stability and hydrate inhibition in Marine deep water, National Nature Foundation of China.

5. Research on protection mechanism and method of shale gas reservoir, National Natural Fund of China.

6. Deep water oil and gas well completion and test optimization method, National 973.

7. Research on high-temperature resistance drilling fluid technology, National 863.

8. Research on ultra-high-density drilling fluid and high-temperature and high-density lower rheology control technology, National 863.

9. Research on deep well drilling fluid and high temperature and high pressure cementing technology under complex geological conditions, national science and technology major project.

10. Research on drilling fluid system of thick salt rock layer in overseas typical oil fields, national science and technology major project.

### Other websites: http://pe.upc.edu.cn/2016/0516/c14044a196608/page.htm