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報告

学生のための国際会議発表支援

IPTC2019 発表報告

The Foundation for Supporting Students to Make a Presentation at the International Conferences
Report on International Petroleum Technology Conference 2019

At first, I'd like to appreciate the Foundation for Supporting Students to Make a Presentation at the International Conferences of the Japan Institute of Energy who supported me for this conference. It is also my pleasure to attend the International Petroleum Technology Conference (IPTC) which was held from 26-28 March 2019 in Beijing, China at the Beijing International Convention Center. My paper "Molecular Simulation of Methane Adsorption Behavior in Kerogen Nanopores for Shale Gas Resource Assessment" was selected from 4000 papers as a poster presentation. Although my one is a poster presentation, it is called ePoster. It is almost like an oral presentation. I can use about 20 slides to introduce my work to audiences in about 30 minutes. EPoster is an interesting way to make a presentation. This is like an oral presentation, however, people can browse my slides when I am not standing there.

IPTC, founded in 2005, is the flagship multidisciplinary technical event in the Eastern Hemisphere. IPTC is held annually and rotates between Doha, Qatar, and venues in the Asia Pacific region. The scope of the conference program and associated industry activities will address technology and relevant industry issues that challenge industry specialists and management around the world. IPTC is sponsored by four industry organizations and societies, the American Association of Petroleum Geologists (AAPG); the European Association of Geoscientists and Engineers (EAGE); the Society of Exploration Geophysicists (SEG); and the Society of Petroleum Engineers (SPE). The IPTC's aim is to promote, aid and encourage technology dissemination and collaboration amongst the multiple disciplines of

Photo 1　Opening ceremony

Photo 2　Presented my research by E-Poster (the right third is me)

Photo 3　Before the conference venue

the petroleum industry.

Returning to Beijing for the second time, this 11th edition of IPTC is hosted by China National Petroleum Corporation (CNPC) and co-hosted by Saudi Aramco. More than 4,000 participants from across the globe expected to attend this premiere upstream conference.

The 2019 IPTC Executive Committee selected the theme “Partnership and Innovation: The Silk Road towards a Sustainable Energy Future”. Strategic and tactical partnerships, when properly constructed, can overcome significant technical and commercial challenges. Innovations have changed the shape of our industry in many areas, and IPTC 2019 showcased the newest innovations in a multi-disciplinary context. The question of sustainability, given the extractive nature of the energy sector, is a topic that will see increased attention in the coming years.

The conference agenda included a CEO plenary session, nine panel sessions, and the presentation of more than 450 technical papers in 70 technical sessions and 6 ePoster sessions.

I presented an improved method to predict the methane adsorption isotherm for a real shale sample using molecular simulation with realistic kerogen model. We compare our simulation results both to experiment and to the simulation results on the basis of a simple graphite model and show how our procedure leads to the creation of more accurate adsorption isotherms of a shale sample at a wide range of pressure.

The novelty of this improved method is that it is able to predict methane adsorption isotherm at a wide range of pressure for a shale sample by considering both adsorption in kerogen mesopores and absorption in kerogen bulk. It can be readily used for any shale sample, where the pore size distribution, porosity, and TOC are known. We remark that the above results and conclusion resulted from our simple assumption. Further discussion might be necessary.

I received several questions. For example, what is the engineering contribution of the predicted adsorption isotherm? My answer is the purpose of my research is to assess the shale gas resource. Besides this, the predicted adsorption isotherm can guide the gas production and know how much we can exploit right now.

It is a good experience for me to attend this conference. There are several presentations which I am very interested in. I expanded my knowledge from various presentations this time. And I noticed that the communication between people from different institutes or university is important. People can exchange valuable information during the conference.

Again, thanks very much to the Foundation for Supporting Students to Make a Presentation at the International Conferences of the Japan Institute of Energy. This is a very good system.

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