

Geoscience and Petroleum

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EDITORIAL

Geoscience and Petroleum are the two fields in amalgamation lead to the finding and extraction of oil and gas resources beneath the earth. We humans have dug out the earth in search of valuable minerals and materials to serve us, where we come across the fossil fuels. The oil and gas sector plays greatest significant role in shaping world economies and facilitating human activities worldwide.

Petroleum Geoscience engineering is a branch dealing with the findings and extraction of oil and gas resources hidden under the earth in a most economical way. Petroleum geology turned into an independent department of science in 1917 and since that time has developed the working models both theoretic and pragmatic from oil and gas seepages to anticlinal theory-trap theory-and petroleum deposits theory.

The basic theoretical problems that conventional petroleum geologists study can be divided into six areas: (1) source rocks, (2) reservoirs, (3) cap rocks, (4) traps, (5) migration, and (6) preservation. Scientific questions on the generation, distribution, and accumulation of oil and gas must be answered.

The scientific study of earth has broadened the understanding of the many intersections between petroleum and the environment, from the search for resources to the study of air pollutants. Geoscientist's are the experts studying the earth nature, and plays a centric role, in analyzing, finding and exploration of the fuel resources, without them the expertise of the geoscientist it is nearly impossible to find and extract the oil and gas economically.

The role of geo-scientist's include

1. Finding oil and gas
2. Drilling safely and effectively
3. Understanding and optimizing hydraulic fracturing
4. Monitoring and mitigating leaks, spills, emissions, and other hazards

5. Determining environmental impacts - geochemists, hydrologists, soil scientists, oceanographers, atmospheric scientists

6. Education and outreach

Petroleum activity accounts for almost half of global value creation, and it will continue to do so for many years to come. Oil and gas will be the dominating energy carrier for 100 years ahead. The energy source oil and gas turned into the assets of modern world and many nations equipped with the energy treasure have successfully monetized and generated the huge amount of wealth transforming the lives and nation's outcome.

The advancements in technological developments have led to faster and convenient exploration, refining and transportation of the petroleum products. Today the entire human race is dependent on the auto fuel, petroleum industry for all means of vehicular transportation and possibly future depend on a stable and large production of oil and gas.

The airways, waterways, highways and roadways all are smoothly driven and enabled mostly due to the petroleum industry led by oil and gas sector.

The following profiles are the part of Petroleum Geoscience:

- Drilling Engineering
- Petroleum Geophysics
- Petroleum Geology
- Petroleum Production
- Reservoir Engineering and Petrophysics

The application of geology (based on chemistry, physics, and biology) to exploration for and production of oil and gas rely on value judgments based on experience and an assessment of validity among the data presented.

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