



باسمه تعالی

# شخصات نشست علمی انجمن ژئومکانیک نفت ایران با موضوع:

## "فیزیک سنگ: کاربرد در علوم زمین جهت یکپارچه سازی مطالعات مخزن"

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❖ شرکت برای عموم با هماهنگی قبلی آزاد می باشد.

### Abstract:

This talk speaks about the role of rock physics in reservoir characterization. The science of rock physics creates a bridge between elastic properties (e.g. Vs/Vp, seismic, elastic moduli etc.), reservoir properties (e.g. porosity, saturation, pressure etc.) and reservoir architecture (e.g. laminations, fractures etc.) properties. It also allow for a reliable prediction and perturbation of seismic response with changes in reservoir conditions. An appropriate rock physics model should be consistent with the available well and core data, surface and borehole seismic as well as production and reservoir engineering figures through discipline such as:

- Seismic reservoir characterisation,
- Anisotropy analysis,
- 4D feasibility and modelling,
- AVO and AVOZ analysis,
- log modelling, calibration and generation,
- Fluid substitution,
- Pressure prediction,
- Geomechanical studies,
- Fracture detection, orientation, and mapping,
- Velocity studies and forward modelling.

This requires that rock physics act as an integrating tool between different disciplines as well as being able to integrate all of them together. Therefore, rock physicist should seek to establish such relationships between the reservoir properties and observed physical responses measured at the surface of the earth, within the borehole environments or even in the laboratory. This talk will go in more deep into rock physics role in reservoir characterization with some examples to highlights this role in subsurface studies.