

Technology Collaboration Center Collaboration Request

REQUEST SUMMARY

Collaboration Request ID: IGCR

Collaboration Request Title: Integrated Geosciences – Carbonate Reservoirs

Requesting Organization: Shell GameChanger

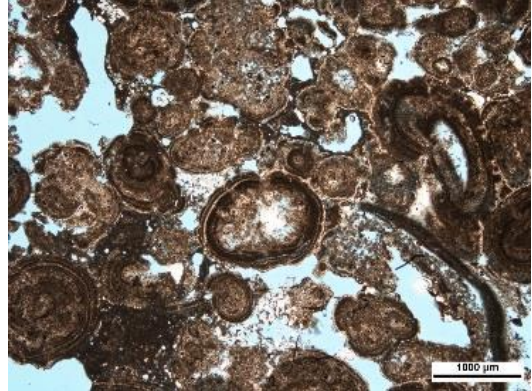
All questions on this request are to be submitted via e-mail to Collaborations@techcollaboration.center

Any organizations interested in participating in this collaboration are to submit a proposal using the Collaboration Response form from techcollaboration.center, the Technology Collaboration Center's (TCC) website. Responses will be forwarded to the Requesting Organization for consideration.

DETAILS – NON-CONFIDENTIAL

CONTEXT:

Carbonate reservoir rock typing is valuable for accurately propagating petrophysical properties in reservoir models. However, there is often a high degree of lateral and vertical heterogeneity, complex pore geometries and multiscale porosities that make conventional approaches inapplicable. There is a gap in the ability to visualize, quantify, and classify all micro-porosity in carbonate rocks under reservoir conditions. Being able to do the above would provide insight into the relevance of various scales of fractures on reservoir production based on production activities including enhanced oil recovery processes.



WHAT WE ARE LOOKING FOR:

We seek novel approaches that can make automated measurements on carbonates ranging from the nano- to macro-scale using non-traditional technologies potentially borrowed from other industries. These technologies will help reduce uncertainties in reservoir rock typing and permeability prediction, fracture-matrix interactions and volumetric calculations as well as in the simulation of carbonate reservoirs.

The proposals must be capable of addressing specific oil and gas industry issues and should include a clear description of the business case. The basic science must be well understood, but the concept would still need to be proven through modeling or testing in a simulated operational environment.

Typically, technologies with a TRL 3 (as per [API 17N](#)) or lower are the best candidates for this call. Please provide a clear description on how you will reach your “Proof of Concept”.

IN SCOPE:

- Technologies and workflows which recognize the multi-scale fractures.
- Technologies and workflows that allow detection of induced micro fractures vs natural fractures.
- Integrated workflows that make use of image analysis, data analytics and artificial intelligence.

OUT OF SCOPE:

- Incremental improvements and isolated point solutions.
- Repackaging or improved utilization of existing technologies.

WE APPLY THE FOLLOWING CRITERIA FOR CONSIDERATION:

- Novelty – Is the idea fundamentally different and unproven?
- Valuable – Could the idea create substantial new value if it works?
- Doable – Is there a plan to prove the concept quickly and affordably?
- Relevant (Why Shell?) – Is the idea relevant to the future of energy?

Any information submitted as part of the process must contain only NON CONFIDENTIAL data and information at this stage.

The funding opportunity will be in the range USD 150,000 - 300,000 to progress a “proof of concept” in a phased approach over a period of no more than 12 months. Further development may be supported and or facilitated by Shell depending on the overall outcome of the initial award.