

Introduction



Conventional EOR Chemical Techniques have an environmental hazards, when injected to formation.



Conventional EOR Techniques have a high Production cost and complex operational process and equipment.



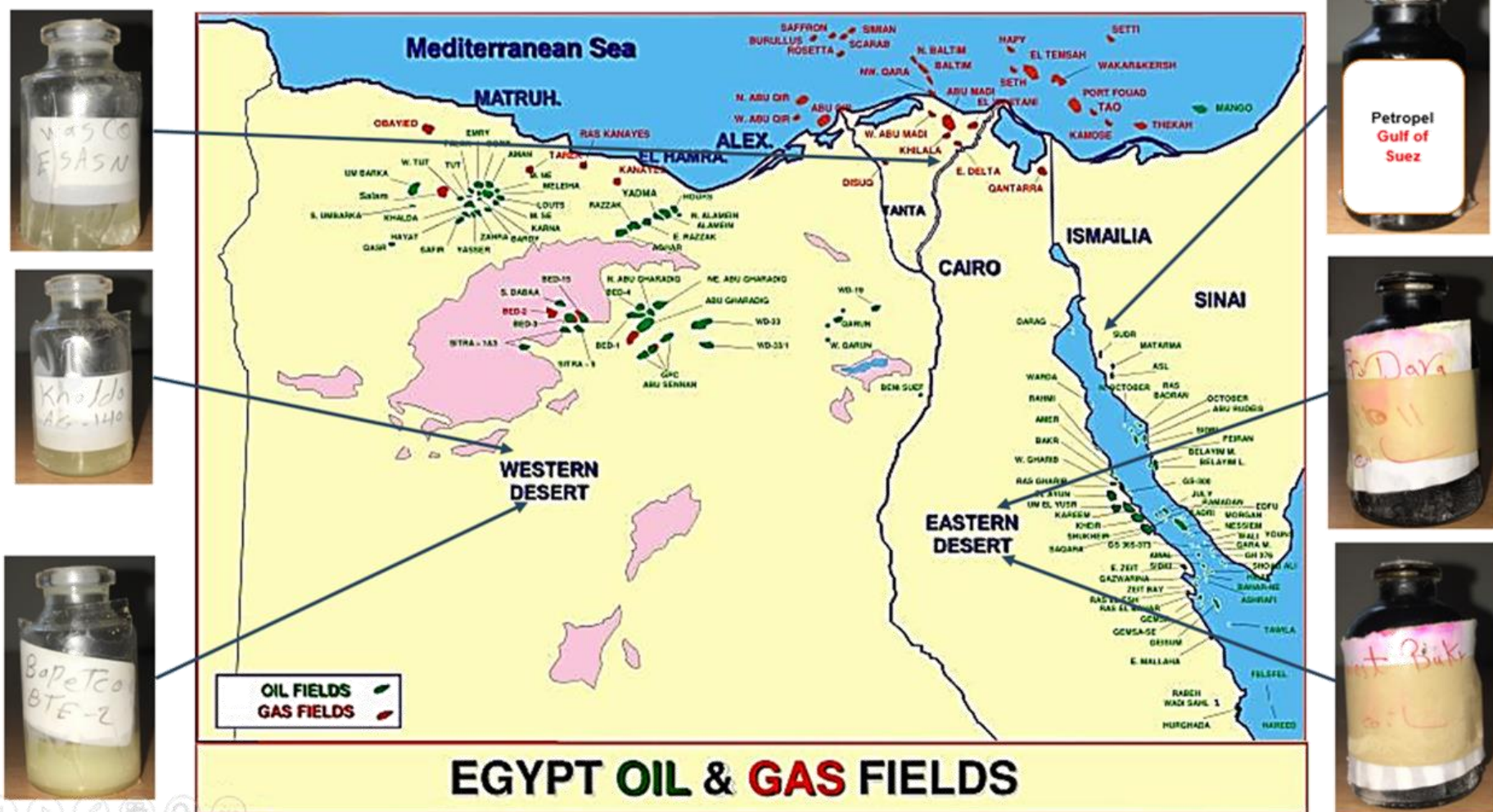
Good Bacteria vs. Bad Bacteria

In 1926, J. W. Beckman made a breakthrough in terms that he proposed developing a method to enhance oil by using microorganisms.



MEOR is a technology using microorganisms to facilitate, increase oil production from reservoir.

Materials and Methods



- The experimental work starts with Identification of bacterial strains that isolated from the collected crude oil samples and identification of their metabolites, and determination of the nutrient compositions.
- Each crude oil sample is representing a certain area of Egyptian oil production.

Conclusions

- MEOR processes are economically attractive for marginally producing oil fields and are suitable alternatives before the abandonment of marginal wells.
- MEOR products are all biodegradable and will not be accumulated in the environment, which means it is environmentally compatible.
- Compared to other EOR technologies, less modification of the existing field characteristics are required to implement the recovery process by MEOR technologies, which are more cost-effective to install and more easily applied.

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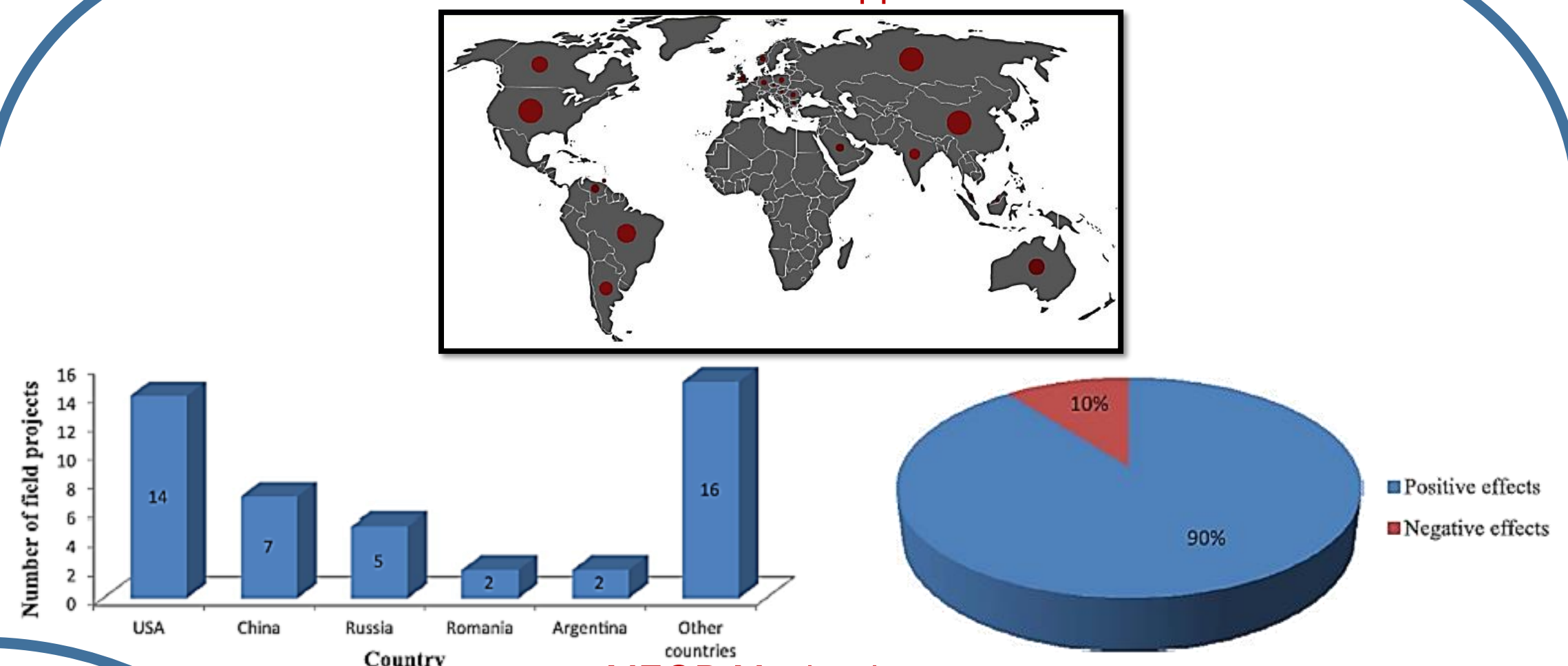


Research Objectives

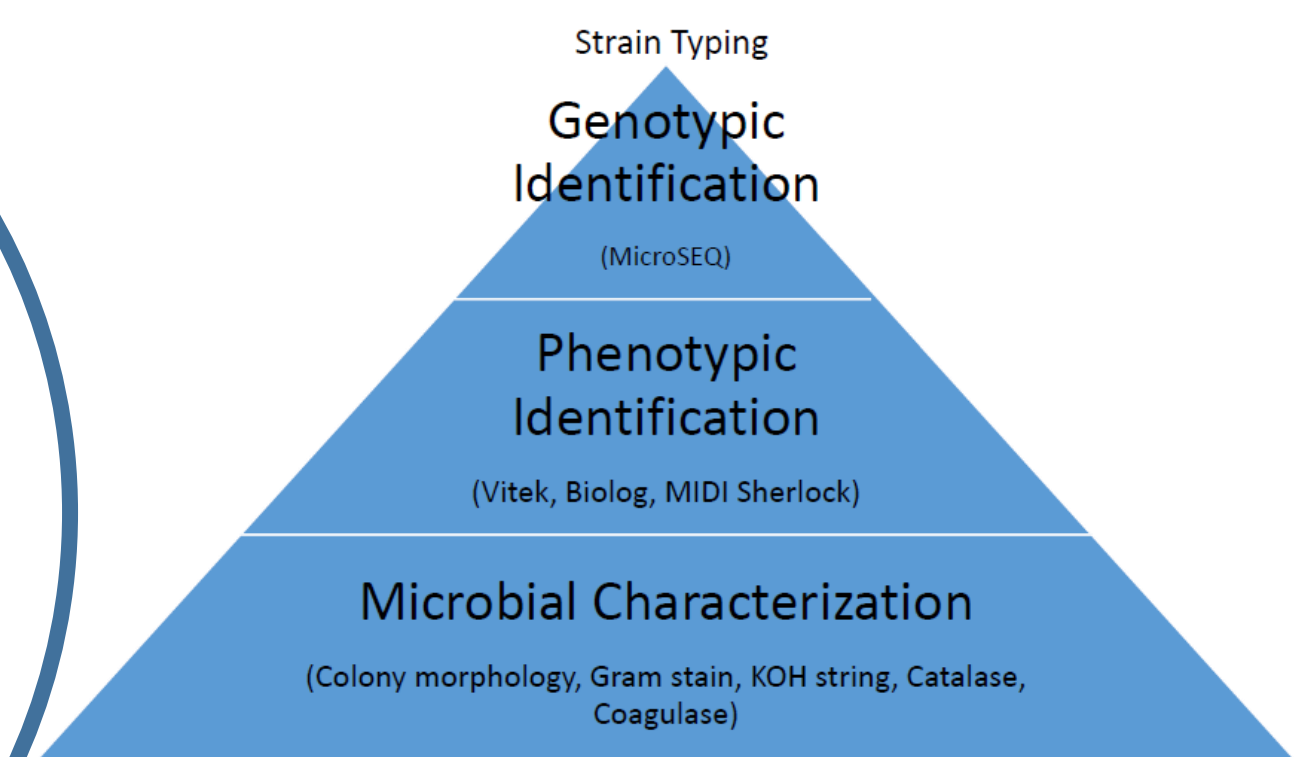
The aims of this PhD study are to investigate the application of the indigenous bacteria in Egyptian crude oil for enhanced oil recovery, and study the effects of salinity, nutrients and concentration on bacteria culture (miscibility).

Results and Discussion

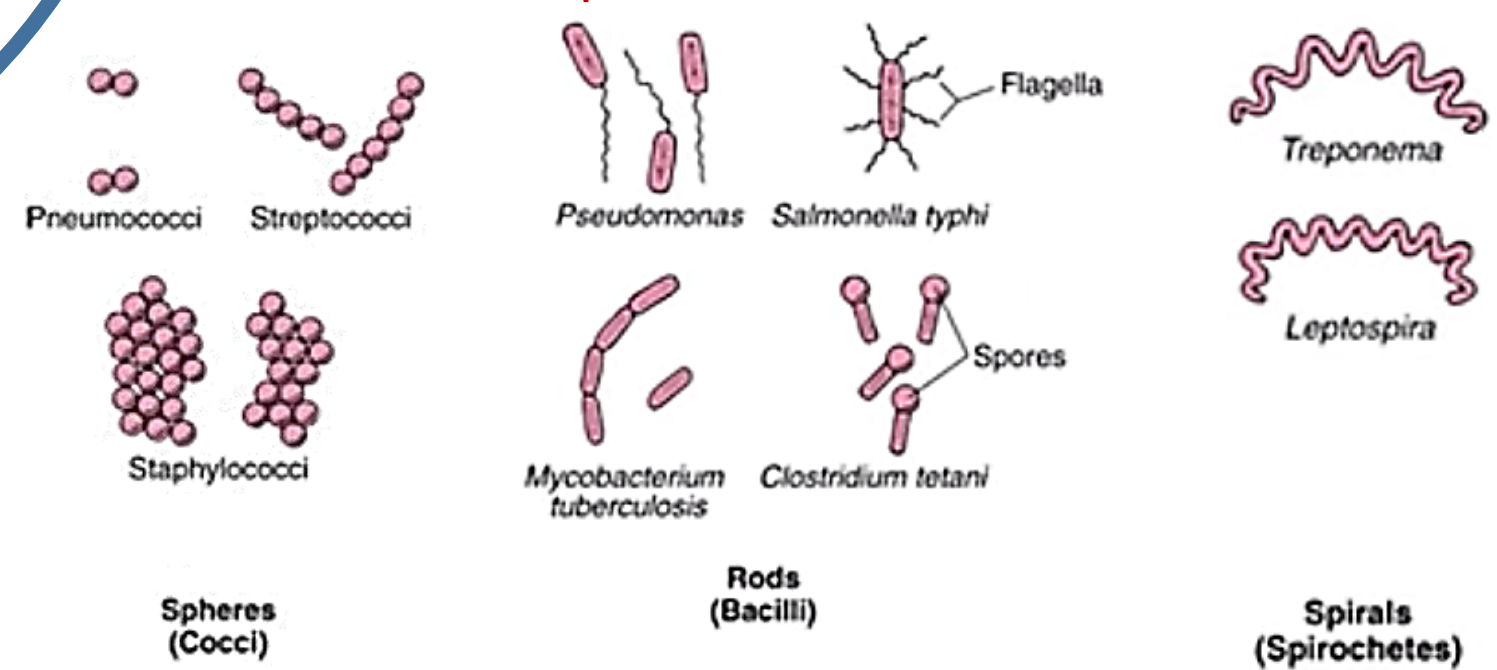
Cases of MEOR Applications



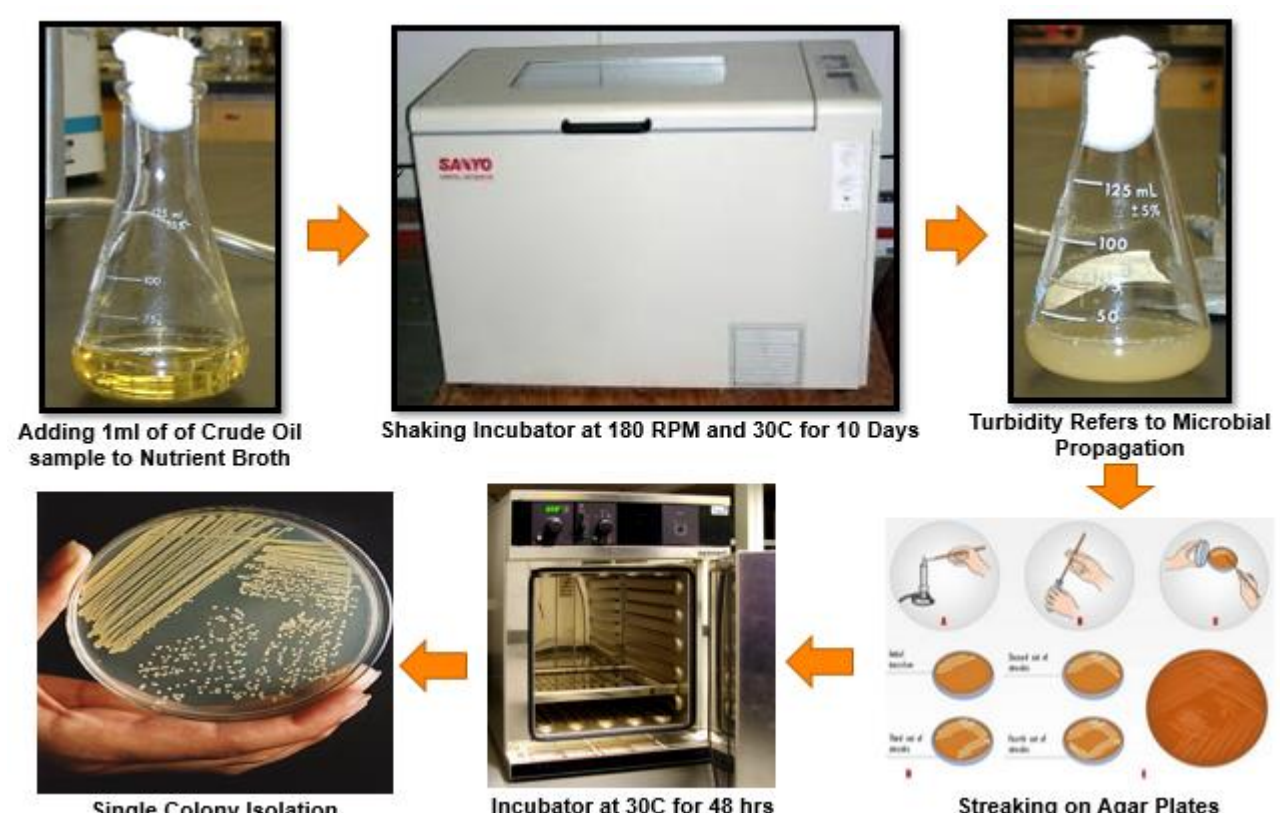
MEOR Mechanisms



Shapes of Bacteria



Microbial Isolation



Microbial Characterization and Identification by Biochemical Tests

