

**Singapore Stanford Partnership Programme**

**MS Project MS08-27**

**Environmental Biotechnology for Microbial Enhanced Oil Recovery**

**Volodymyr Ivanov**

Injection of seawater into an underground oil-bearing formation represents the most commonly used approach for offshore and coastal onshore management of oil recovery. This injection causes formation of hydrogen sulphide, which deteriorates quality of oil, corrodes equipment, and pollutes environment with discharged water. There is known biotechnology for control of hydrogen sulphide production and microbial enhanced oil recovery based on the addition of nitrate and denitrifying bacteria in injected seawater. However, high cost of nitrate limits application of this biotechnology in oil industry. Therefore, new approaches must be developed. The project is theoretical and experimental testing of innovative biotechnology aiming to overcompete sulphate-reducing bacteria in oil-bearing formation by iron-reducing bacteria to increase and enhance oil recovery.