

Technical Subject

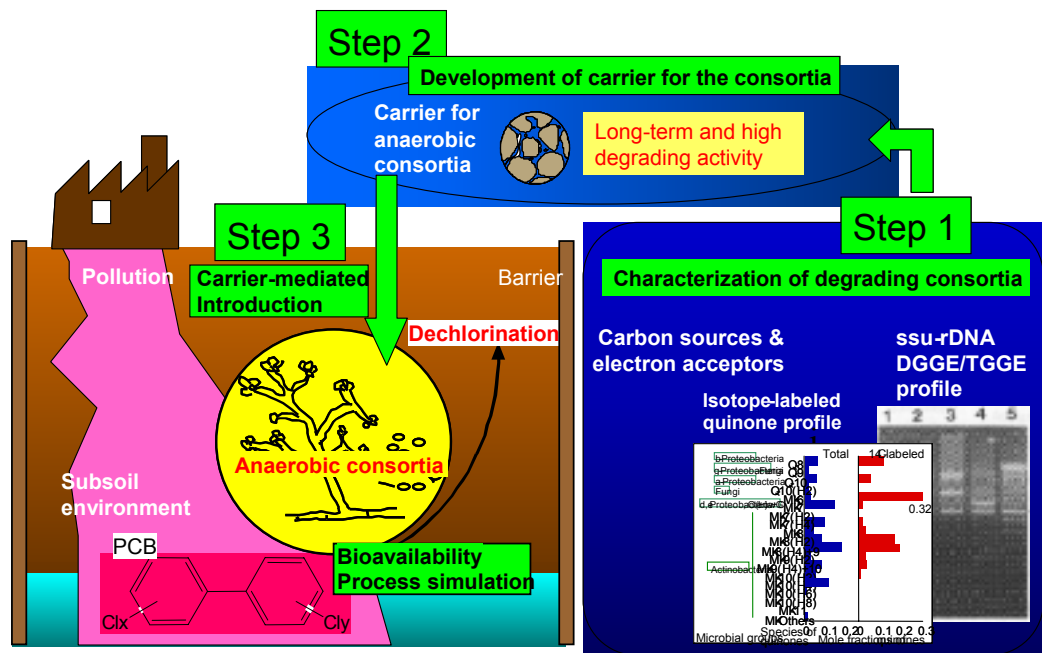
Characterization and control of anaerobic microbial consortia degrading polychlorinated biphenyls under contaminated subsoil environment

Corresponding applicant

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From the characterization of PCBdegrading anaerobic consortia---- To the carrier-mediated introduction of the consortia into polluted subsoil

Goal & contribution to well-being all humanity

Through devising the anaerobic bioremediation of the subsoil and ground water environment contaminated with polychlorinated biphenyls (PCB), natural resources will be conserved for future.

Method/Approach

Target: Anaerobic bioremediation of PCB-contaminated subsoil by the introduction of the degrading consortia in bench-scale study

Preparation by now: the analytical system for PCB congeners, Active soils of PCB dechlorination

Plan: Three steps.

1. Characterization of the PCB-degrading anaerobic consortia obtained from surface soils and subsoils
2. Development of carrier for the degrading anaerobic consortia with maintenance of high activity
3. Carrier-mediated introduction of the degrading consortia into contaminated subsoil environments. Remediation efficiency and bioavailability of PCB will be simulated.

Introduction/position of the session

There are reports to show the contamination of subsoils with PCB in Japan. Although immediate hazard is not expected, the contaminated subsoils should be remediated for long-term conservation of natural resources. The contaminated sites are often simply segregated with barriers and not remediated. On the other hand, it is really a big challenge to isolate the anaerobic PCB-degrading microorganisms. Many scientists have tried it but not succeeded. The main aim of the study is not to isolate the degrading microorganisms but to control the anaerobic microbial consortia for PCB degradation in the subsoil environment.