YOUNG RESEARCH TEAMS - PN-II-RU-TE-2012-3
"Retrieving new bacterial isolates for potential bioremediation and biotechnological applications"

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In the last project period, some of the previously initiated bacterial species descriptions have been completed and three manuscripts have been submitted to the *International Journal of Systematic and Evolutionary Microbiology*. One of the type strains was validly published under the name *Rufibacter quisquiliarum* sp. nov. Two additional manuscripts describing new taxa (representing a new genus, *Caenimicrobium hargitensis* gen. nov., sp. nov., and a new species, *Rhodobacter sovatensis*, sp. nov.) are under revision, their acceptance is expected in the next few days. All isolated bacterial strains have been deposited in the culture collection of the host institute. Additionally to describing new taxa, selected *Acinetobacter* strains were tested in kinetic studies and also in small bioreactors fed with artificial sewage. One strain was able to completely degrade phenol at 1000 mg/L concentration within 24 hours, while a mixture of two strains was successfully applied in a bioaugmentation experiment, since after adding these strains, the potential of organic carbon and nitrogen removal was completely recovered in the bioreactor. All these results confirmed that our strain isolation strategy led to obtain new taxa and also led to biological resources which could be applied in full-scale treatment processes in the future.