

Session 3
Applied Biological Research II

Introduction to Session 3

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S. LIEN¹ AND G. W. STRANDBERG²

¹DOE Idaho Operations Office/Idaho National Engineering Laboratory; and ²Oak Ridge National Laboratory, Oak Ridge, TN 37831

As in the previous session, this session's papers cover a diverse array of research topics. Although numerous organisms that can solubilize coals, particularly lignites, have been found, instances in which organisms can grow on macromolecular components of coal are relatively few. Polman et al. present evidence that a strain of bacterium that they isolated can indeed grow on alkali-solubilized lignite components. Two papers from D. L. Crawford's laboratory address lignin peroxidase, an enzyme active in lignin degradation: First, Lodha et al. describe methods of increasing the yield of this potentially useful enzyme. Second, Magnuson et al. report detailed enzyme characteristics. When an originally scheduled paper was canceled, we were fortunate to have D. P. Chynoweth from the University of Florida in at the last minute. We are pleased to include his paper describing interesting work on a novel process for anaerobic composting of municipal solid waste. Bare et al., from Belgium, discuss the stereoselective conversion of octyl-4-chloroacetoacetate to chiral alcohol, a precursor of L-carnitin, by *Saccharomyces cerevisiae*. Both mono- and biphasic liquid systems were investigated. In their continued effort to develop a system to microbially convert synthesis gas to methane, E. C. Clausen's group (Kimmel et al.) reports the results of a comparison of two sizes of trickle-bed bioreactor systems using a consortium of *Rhodospirillum rubrum*, *Methanosarcina barkeri*, and *Methanobacterium formicicum*. Finally, Gangl et al. describe an interesting metabolic model for fumaric acid production, which may prove useful in proving productivity.