Phytoremediation: State of the Science

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Employment of plants for removing hazardous substances from soil and aqueous streams continues to intrigue the public, scientists, and environmental engineers. Phytoremediation is a family of extensively developed novel plant-based remediation technologies that can provide inexpensive alternatives to conventional soil remediation technologies. Scientific and technological aspects of phytoremediation are being developed in academia and industrial settings all over the world. The Joint Coordinating Committee for Environmental Systems (JCCES) established between U.S. Department of Energy (DOE) and the Institute for Ecology of Industrial Areas, Poland (IETU) deals with environmental remediation technologies throughout the Central and Eastern European region. As part of the JCCES program the Institute for International Cooperative Environmental Research (IICER) of Florida State University collaborated with the IETU in development of phytoremediation technology. The phytoremediation project targeted two key aspects of heavy metals remediation: (1) optimization of large scale Pb and Cd phytoextraction, and (2) using plants to reduce the environmental and human health risk associated with mercury-contaminated soils.