Success Story

Squeezing Energy out of Sand

Early in 2011, Dr. Paul Painter contacted the Pennsylvania Small Business Development Center (SBDC) Clean Technology Resource Center (CTRC) seeking assistance in completing a grant application he was planning to submit to the National Science Foundation (NSF). The grant solicitation issued by NSF was classified as part of their Accelerating Innovation Research (AIR) program. The objective of the AIR program is to provide targeted resources to researchers aimed at translating fundamental research into commercial applications.

Paul and Bruce Miller have spent the last several years researching various processes and techniques to separate oil from the very mineral rich tar sand fields in Canada and the Western United States. Traditional processes to separate tar sands are expensive and generally result in environmental issues.

The research being conducted by Dr. Painter’s research team focused on a novel method, which utilizes ionic liquids to separate the heavy viscous oil from sand, also is capable of cleaning oil spills from beaches and separating oil from drill cuttings. The Penn State separation method uses very little energy and water, and all solvents are recycled and reused.

Paul and Bruce contacted the CTRC Business Consultant to discuss a plan to support the NSF application. The CTRC Business Consultant assisted the team with market research and the development of a business plan/commercialization strategy which became a part of the final NSF application.

In the summer of 2011, Paul and Bruce were notified that they received a $150,000 grant from NSF to support their research project. This funding will allow the team to continue their research and develop a larger scale version of the separation unit.

Paul and Bruce have formed a company to license this technology from Penn State University. Following the formation of the new Company (IL Fuels, LLC), industry interest surrounding the team continued to increase to the point where an agreement was reached with a private investor to provide additional start-up capital to the operation.

According to Dr. Painter, “Bruce and I were greatly appreciative of the assistance provided by the CTRC and believed that their contribution was a very positive factor in the NSF grant evaluation and award process. We are looking forward to working with the CTRC on future grant applications.”