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**Algae-based wastewater treatment for biofuel production: Processes, species and extraction methods**Hossein Ahmadzadeh<sup>1</sup> and Stephen R Lyon<sup>2</sup><sup>1</sup>Ferdowsi University of Mashhad, Iran<sup>2</sup>AlgaXperts, LLC, Wisconsin

The rational and principles of an algae-based integrated industries with multiple sources of revenue are discussed in this presentation. After an overview of historical references on algae-based programs, a step-by-step process is described for a high quality effluent and algal biomass with an optimized algal oil and protein content along with the remediation technologies on wastewater and air pollution remediation. The dominant strains of algae for different purposes are discussed and a list of some genera including *Euglenia*, *Scenedesmus*, *Selenastrum*, *Chlamydomonas* and *Actinastrum* are suggested as candidates for large-scale culturing based and their ability to strip nutrients and organic matter from wastewater and polluted air, growing rapidly and producing a significant level of oil and protein. The final part of the presentation deals with Supercritical Fluid Extraction as an efficient means of isolating algal oil and other commercially important compounds from algal biomass.

**Biography**

Hossein Ahmadzadeh completed his Ph.D in Bioanalytical Chemistry in June 2000 from Alberta University and postdoctoral studies from Alberta University (Canada), York University (Canada) and University of Minnesota (USA). He was an Assitant and Associate Professor in California State Polytechnic University from 2005 to 2011. He then moved to Ferdowsi University of Mashhad in Iran. He has published more than 40 papers and in reputed journals and has been serving as a referee for more than a dozen of reputable journals. His interests include algae proteomics and lipidomics, environmental bioremediation, high sensitivity analytical detections and high resolution separation of biomolecules.

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