**Separations**

Dr. Ramalingam Subramaniam (Ram) is an Assistant Professor. He joined the department in August, 2012. He has taught Chemical Engineering Calculations, Chemical Engineering Thermodynamics, Chemical Process Control, and Transport Phenomena. He is serving as a member of the Graduate Affairs Committee (GAC). His research areas include biofuel production, wastewater treatment, and process modeling and simulation. His research focuses on producing biofuels using various renewable waste materials, such as sweet potato starch, shrimp waste, landfill leachate, and lignocellulose. The materials are transformed into a rich carbon and energy source that specific microbial strains convert into feedstocks for biofuels and chemicals. Dr. Ram is also adding value to agricultural waste. He developed a new, low cost adsorbent from Cashew Nut Shell, which was applied for the removal of organic dyes and metals from wastewaters.

Dr. McIntyre is a new assistant professor within the Department. He is conducting research within the Louisiana Engineering Activity in Rheology and Nanomaterials (LEARN Lab) on suspensions containing nanoparticles in electric and magnetic fields, specifically the discovery and optimization of nanocage structures in suspensions. He recently was awarded the Research Competitiveness Subprogram from the Louisiana Board of Regents. His research seeks to connect electrical and mechanical aspects of materials used in fluid flow. Fluid devices using electric and magnetic fields are now used in automobiles, and personal electronics. For example, automotive manufacturers are increasing passenger comfort and fuel efficiency using magnetic fluid “smart” shock absorbers that adjust for vibrations on the road by using electromagnetic fields without valves or moving parts. The technology allows for digital control of the mechanical behavior of devices by controlling the fluid behavior simply by increasing or decreasing the field strength. Electric and magnetic field devices allow for adjustments up to 500 times/second for shocks and vibrations experienced by some of the latest model vehicles. Applications are also being developed for manufacturing, and oil exploration related to the prediction of asphaltenes precipitation.