November 2016

ARPA-E award of $2.7M under IONICS projects for selective and low-cost separators for batteries with liquid reactants e.g., flow batteries

United Technologies Research Center's (UTRC) will lead this project entitled: "Synergistic Membranes And Reactants for a Transformative Flow Battery System" (acronym: SMART-FBS). The major objective is to further reduce the capital cost of redox flow batteries by making both the active materials and membranes more cost effective. The project team is comprised of UTRC, Lawrence Berkeley National Laboratory (LBNL), University of South Carolina, Advent Technologies and Harvard University. The team will develop these new components simultaneously, from which they expect to achieve synergies that will result in cells with excellent voltaic and coulombic efficiencies. The new membranes will be polymer-based and much less costly than currently used ion-exchange membranes, while also enabling significantly higher selectivity. The new reactants will be comprised of inexpensive large organic molecules that should also make it easier for the membranes to be selective to the charge-carrier ion.

USA	One Mifflin Place, 119 Mt Auburn St, Suite 400, Cambridge, MA 02138		T: +1 857 264 7035
GREECE	Kifisias 44, 15125 Marousi Athens	T: +30 210 637 8820	F: +30 210 637 8888
GREECE	Patras Science Park,26504 Patras	T :+30 2610 911583	F +30 2610 911585

Website: www.advent-energy.com Email: info@advent-energy.com