

Canada School of Energy and Environment: Project listing (Rounds 1 to 4)

| ROUND 1 | | |
|--------------------------|---|---------------|
| <i>Scientific Leader</i> | <i>Title of Project</i> | <i>School</i> |
| Amirfazli, Alidad | Advanced multi-functional Composite Material for energy systems | U of A |
| Berlinguette, Curtis | Development of organic solar cells using phosphorus-based molecular dyes and nanostructure titania | U of C |
| Hettiaratchi, Joseph | MethanoBiofilters (MBFs) to Control Low-volume Atmospheric Methane Emissions | U of C |
| Kim, Jeong Woo | Spaceborne Surface Heave Monitoring by Production Activities at Albertan Oil Field | U of C |
| Kumar, Amit | Thermo-chemical conversion of agricultural biomass for carbon sequestration | U of A |
| Love, Jim | Field Assessment of displacement ventilation in a School | U of C |
| Lubell, Adam | Development of magnesium-phosphate ceramic composite containing coal waste ash | U of A |
| Mayer, Bernhard | Testing the Effectiveness of Stable Isotope Approaches for Tracing the Fate of Nitrogen and Sulfur Emissions from Oilsand Operations in Surrounding Ecosystems | U of C |
| Messier, Geoffrey | Wireless Network for Monitoring of Home Energy Consumption | U of C |
| Sego, David | Characterization of Petroleum Naphthenic Acids (NAs) in Oil Sands Process-Affected (PA) waters Using Fluorescence Technology | U of A |
| ROUND 2 | | |
| Chua, Gordon | Application of the alga <i>Dunaliella</i> in biofuel production and bioremediation of naphthenic acid | U of C |
| Mingzhe, Dong | Development of a Novel Method of Treating Water-in-Heavy Oil Emulsions at a Low Temperature for Energy Saving and CO ₂ Emission Reduction | U of C |
| Goss, Greg | Nanomaterials for Environmental Remediation of Oil Sands Tailings Water | U of A |
| Hashisho, Zaher | Integration of microwaves and novel molecular sieves for energy efficient gas separation and purification | U of A |
| Hayes, Paul | Green Catalysts for the Preparation of Biodegradable Plastic from Renewable Resources | U of L |
| Musilek, Petr | Field Verification of Satellite-based Environmental Monitoring in Oil Sands Development Areas | U of A |
| Shimizu, George | Selective gas separation membranes based on nanoporous metal organic frameworks | U of C |
| ROUND 3 | | |
| Bergens, Steven | Prototyping the first rechargeable direct 2-propanol alkaline fuel cells for mobile electronics | U of A |
| Bergerson, Joule | Should Alberta produce bitumen, SCO or refined petroleum products? The relative value of downstream processes evaluated using two complementary assessment models | U of C |
| Luckert, Marty | Forest Plantations in Alberta: Prospects for Bio-Energy | U of A |
| Mahinpey, Nader | Pretreatment of lignocellulosic biomass using bio-catalysis for bio-butanol fermentation | U of C |
| Rivard, Benoit | In situ hyperspectral imaging for the characterization of oil sand tailings | U of A |
| Sutherland, Todd | A new concept for organic bulk-heterojunction solar cells: Charge transport in liquid crystals | U of C |
| Wang, Xin | Using Data Mining Methods to Optimize Steam Injection Processes for Alberta Oil Sands Production | U of C |
| Xue, Deyi | Feasibility study of a Green Battery: Portable Direct Alcohol Fuel Cell (DAFC) System | U of C |
| Zareipour, Hamidreza | An Energy Monitoring and Control Platform for Smart Electricity Grids | U of C |
| ROUND 4 | | |
| Amirfazli, Alidad | Study of Drop-Particle Collision to Increase Efficiency in Fluid Coker Process | U of A |
| Berlinguette, Curtis (1) | Towards Clean Hydrogen Production: Immobilization of a Cobalt Water Oxidation Catalyst on a Surface | U of C |
| Berlinguette, Curtis (2) | Rational Design of Stable Dyes for Dye-Sensitized Solar Cells | U of C |
| Gieg, Lisa | Bioconversion of crude oil from marginal oil fields to natural gas as a sustainable energy recovery strategy | U of C |
| Jacob, Zubin | Metamaterial enhanced renewable energy devices | U of A |
| Liu, Yang | Novel Microbial Fuel Cells for Energy Efficient Oil Sand Process-Affected water Remediation | U of A |
| Park, Simon | Development of Cost Effective High Performance Dye Sensitized Solar Cells | U of C |
| Rival, David | Development of Novel Gust-Measurement Tool for the Wind-Energy Industry | U of C |
| Trudel, Simon | Facile generation of solar fuels: Highly active catalysts for efficient water-splitting | U of C |
| Tsenkova, Sasha | Energy Efficiency Retrofits: Policy Solutions for Sustainable Housing in Canada | U of C |
| Wang, Xin | Using Two-step Fuzzy Ranking and Artificial Neural Network for Steam Assisted Gravity Drainage (SAGD) Reservoir Characterization | U of C |