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Astralux, Inc. announces new contract designed to convert waste heat from automobiles into energy

Boulder, Colorado, December 1, 2005 — Astralux Inc., a pioneer in compound semiconductor research and development, today announced that it has been awarded a Small Business Innovative Research (SBIR) Phase I award from the Department of Energy. This project will concentrate on developing technology which will use waste heat from automobiles to generate electricity, leading to great improvement of the efficiency of combustion engines, reduction of greenhouse gas emissions, and less dependence on foreign oil.

Automobile engines generate significant waste heat, which could be recovered and converted to electricity to increase the range of electric hybrid vehicles. Thermionic emission allows conversion of waste heat, but traditional thermionic materials provide very low conversion efficiencies at the moderate temperatures found in the automobile exhaust system. Thus, there is a need to develop direct thermal-to-electric converters capable of greater conversion efficiencies at moderate temperatures.

This converter technology provides a solution to the general need to generate high energy density electrical power sources for automobiles, aircraft, and space vehicles, as well as to convert the heat already present in the high temperature power sources in these vehicles into electrical power. These converters could also find applications in conversion of waste heat from chemical and other manufacturing processes into useable electrical energy, thereby cutting costs and reducing negative environmental effects. Thermionic power generation, the development of which is described herein, is a very attractive solution to all of the needs described above.

“Creating cheap, clean, and efficient alternative sources for energy is a ever increasing challenge,” commented Dr. Rande Treece, President and Chief Executive Officer. “This technology helps meet that challenge by generating energy from heat which would simply go to waste otherwise.”

Astralux Inc., established in 1992, is a Boulder, Colorado-based research firm originally founded to research and develop opto-electronic materials and devices. Over time the company has expanded its business to include R&D in a broad range of advanced technologies with the objective of conceiving, growing, and launching new businesses to bring best-of-breed innovations to market.

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