Energy Harvesting Subsystems Target the Plumbing and HVAC Applications

Nextreme Thermal Solutions has developed two new energy harvesting subsystems for the plumbing and HVAC industries. The subsystems are the latest additions to the company's Thermobility energy harvesting platform that uses thin-film thermoelectric technology to convert available thermal energy into electric power for a variety of autonomous self-powered applications. Thermobility uses differences in temperature to enable power anywhere there is an adequate heat source. The advanced technology eliminates the need to use traditional wired power sources or replaceable batteries. When paired with wireless transmitters, the Thermobility solution can provide electric power for years of maintenance-free operation, thus expanding the possibilities for new wireless sensor applications in plumbing, HVAC, industrial control, transportation, automotive and building management. Thermobility is presented as the ideal power source for wireless transmission applications.

Nextreme is actively applying Thermobility energy harvesting in the development of plumbing subsystems. Water in plumbing fixtures provides an excellent source of thermal energy for a variety of "green plumbing" applications. Thermal energy from water supply lines under a sink and during flush valve operations can be converted to electricity as a source of power for LED status indicators, hands-free faucets, soap dispenser solenoids, and wireless transmitters for data acquisition applications. Harvested power can help reduce the size of batteries or eliminate them entirely depending on the application.

The HVAC industry can employ Thermobility wireless power generators in applications for sensing of temperature, humidity and airflow in HVAC systems. Wireless Thermobility sensor subsystems can harvest thermal energy from the hot

or cold temperature differences found in air plenums, thus eliminating the need to provide wires to these devices.

In addition, these HVAC subsystems can store energy and provide on-demand power while reducing the total cost of ownership by eliminating the prohibitive cost of battery replacement.

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