Yale engineers get $2.6 million for power generation project

Yale UniversityYale University

The U.S. Department of Energy has awarded two Yale engineering researchers more than $2.6 million to develop a low-cost power generation system that relies on waste heat for fuel.

Menachem Elimelich [1] and Chinedum Osuji [2] of the Yale School of Engineering & Applied Science expect to start the project early next year and finish in early 2016.

The Energy Department made the award through its "OPEN 2012" program [3], administered by the Advanced Research Projects Agency – Energy. The agency seeks and supports "transformational, breakthrough technologies that show fundamental technical promise but are too early for private-sector investment."

In all, the agency awarded $130 million to 66 universities, companies, and national laboratories. Yale's grant amount totals $2.64 million.

"We are very excited about the opportunity to demonstrate our concept of power generation from waste heat at the laboratory scale as well as in the field," the researchers said.

Elimelich is the Roberto C. Goizueta Professor of Chemical & Environmental Engineering and director of Yale's environmental engineering program. Osuji is an associate professor of chemical & environmental engineering. Tzahi Cath, an associate professor of environmental science and engineering at the Colorado School of Mines, is also a member of the research team.

The researchers plan to develop a power system that generates electricity using low-temperature waste heat from power plants, industrial facilities, and geothermal wells. They expect to create electricity by exploiting the difference in salt content between two liquid streams. They'll use processes known as pressure-retarded osmosis and reverse electrodialysis.

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