



THE RIGHT WAY — Dr. Shahriar Jahanian (l) and Dr. Hossein Rostami work on their fly ash fil

Researchers in Philly find fly ash can be useful

Two Iranian-American professors working in Philadelphia have discovered a new method for using filthy fly ash to clean contaminated water.

Fly ash is the waste product left after coal is burned. Some of it is used in construction work, but most of it is just a mess to get rid of.

But Dr. Shahriar Jahanian of Temple University and Hossein Rostami of Philadelphia University stumbled across a new use. Like many great discoveries, it came about because they forgot something small—and then discovered something large.

The two men were wondering if fly ash could be used as a water filter. But they weren't getting anywhere with that idea. Separately, they were working on ways to make fly ash more useful in construction, by substituting it for Portland cement when making concrete. They were having great success there. One evening, they treated some fly ash chemically and went home without remembering to put it in the oven to be cured. Overnight, it was air-dried.

ried to Faraneh, he has two children, Sasan, 18, and Semira, 2.

Currently about 30 percent of the nation's fly ash is recycled for use in construction concrete. The rest is pure waste that must be disposed of in landfills.

The National Science Foundation and the U.S. Energy Department are funding further research by Jahanian and Rostami. So far, they have been able to remove 99 percent of cadmium, arsenic and chromium from contaminated water. They are working now on lead, mercury and other major contaminants.

The fly ash filter is not expected to clean water sufficiently to make it drinkable, but instead to make it usable for irrigation, Jahanian explained.

Thus far the pair have worked with the process only in the laboratory. They estimate it may take a decade to bring a commercial filter to the market.

But the market could be substantial. There are 200,000 contaminated groundwater sites in the United States and 70 percent of them are believed to contain heavy metal contaminants.