

Researchers produce high grade rare earth concentrate from coal source

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University of Kentucky researchers recently produced nearly pure rare earth concentrates from Kentucky coal sources using a novel rare earth recovery process.

The process recovered over 80 percent of the rare earth elements present in the feed sources. The concentrates were comprised of more than 80 percent total rare earth elements on a dry whole mass basis and over 98 percent rare earth oxides.

Critical elements such as neodymium and yttrium represented over 45 percent of the total concentrate, which are important due to their use in national defense technologies and the high-tech and renewable energy industries.

"The novel rare earth [recovery](#) process is low cost and more environmentally friendly than alternative technologies such as solvent extraction," said Honaker. "We are excited about the new development and look forward to testing the process in our pilot-scale facility which will be operational during spring 2018."

Another unique feature of the new rare earth process is that scandium, a highly valued [rare earth element](#), is efficiently separated from the other rare elements and concentrated as a separate product from the circuit. The process will be part of a 1/4-tph mobile rare [earth](#) recovery pilot scale plant being developed and tested by Honaker's research team as part of the U.S. Department of Energy project.

Provided by University of Kentucky

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