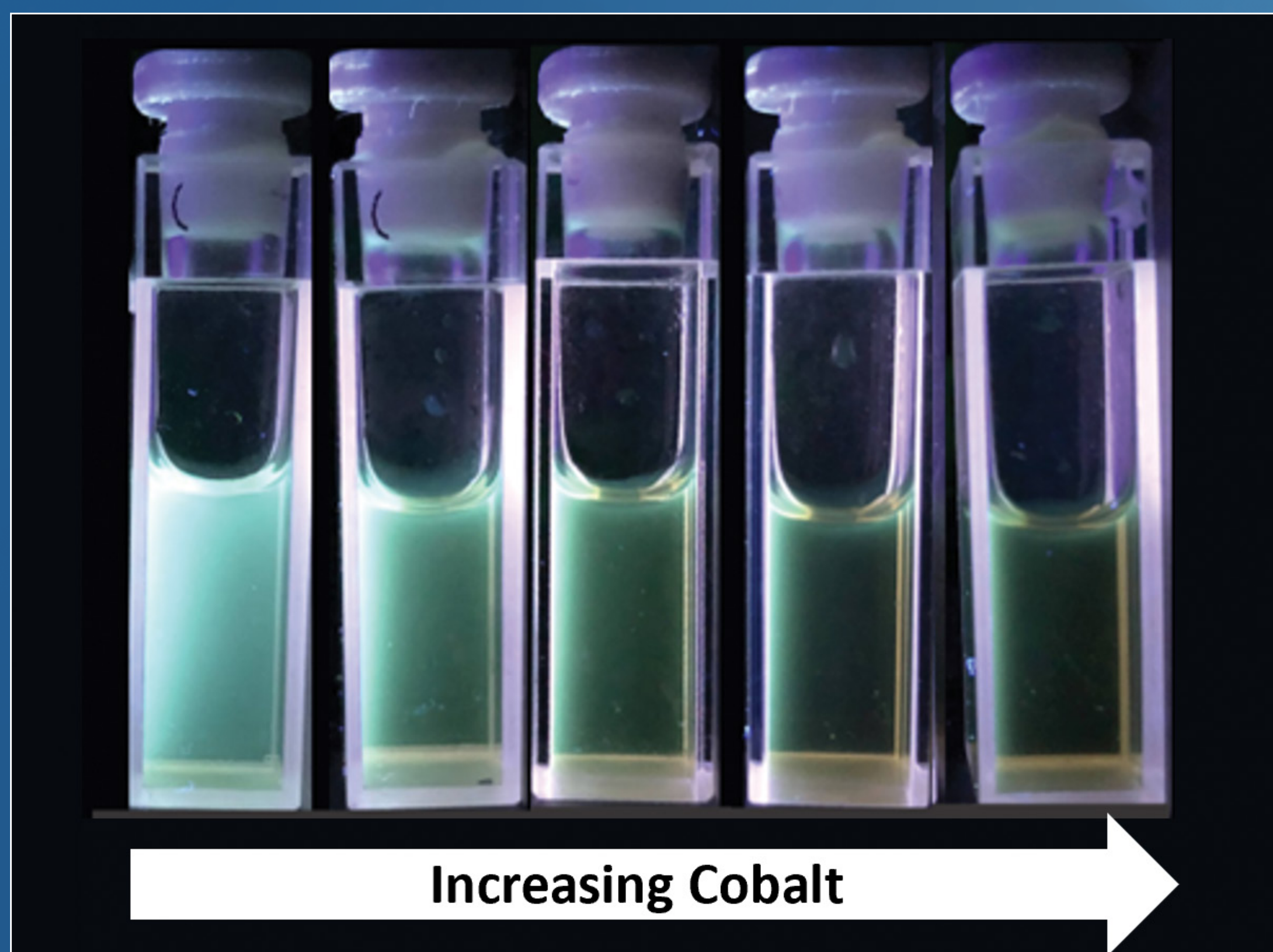


# NETL RESEARCHERS DEVELOP TECHNOLOGY TO DETECT A SCARCE CRITICAL MINERAL IN COAL BYPRODUCTS

*NETL researchers have created a compact, portable device to detect cobalt at low concentrations in U.S. coal byproducts.*



Coal byproducts include materials such as power plant coal ash and acid mine drainage. Cobalt is used for a wide range of applications, from aircraft engine alloys to lithium batteries for electric vehicles and consumer products.

- The NETL technology responds nearly instantly to cobalt in coal byproducts with detection performance comparable to commercial devices but at significantly lower costs.
- The NETL system uses luminescent carbon dots that are co-doped with phosphorus and nitrogen-containing molecules as the sensing materials and is used in liquid streams such as coal ash extractants.
- Using U.S. coal byproducts as a source for cobalt could provide a new domestic resource for a critical mineral that is currently sourced principally from other countries.

## RESEARCH PRIORITY



DOMESTIC CRITICAL MINERALS PRODUCTION

## PERFORMER



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