Spinning a new role for CDs and CD players

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CD-ROMs and DVDs and the hardware used to play these popular audio and video compact discs (CDs) have “enormous” potential as a new generation of portable, inexpensive instruments for home health monitoring and laboratory-based testing, scientists in Spain are reporting in the Oct. 15 issue of ACS’ *Analytical Chemistry*, a semi-monthly journal. CD technology could be adapted for tests ranging from the measurement of environmental toxins to at-home disease diagnosis, their report said.

In the study, Angel Maquieira and colleagues demonstrated technology that uses ordinary CDs and CD players as analytical tools with the potential for performing a range of key laboratory tests.

As proof of principle, they developed a CD with a surface coating of so-called immunoassay materials and used it to identify three pesticides — 2,4,5-TP, chlorpyriphos, and metolachlor — placed on the disc. Upon spinning in a CD player with its standard laser light, the compounds caused changes in light intensity. A computer interpreted those changes and correctly named the compounds.

“The obtained results show the enormous prospective of compact discs in combination with CD players for multiresidue and drug discovery applications,” the article states. The researchers are currently working on ways to increase the sensitivity and versatility of the new technique.

Source: American Chemical Society