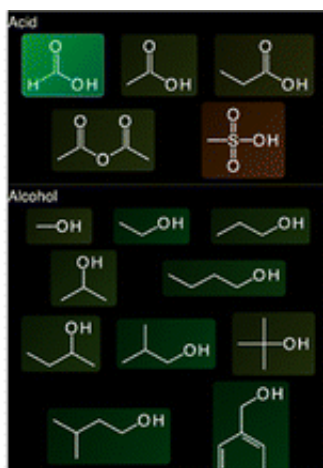


First mobile app for green chemistry fosters sustainable manufacturing of medicines

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Mention mobile applications, or mobile apps, and people think of games, email, news, weather, productivity and other software for Apple, Android and other smart phones and tablet computers. But an app with broader impact—the first mobile application to foster wider use of the environmentally friendly and sustainable principles of green chemistry—is the topic of a report in the American Chemical Society's new journal, *ACS Sustainable Chemistry & Engineering*.

Sean Ekins, Alex M. Clark and Antony Williams point out that the companies that manufacture medicines, electronics components and hundreds of other consumer products have a commitment to work in a

sustainable fashion without damaging the environment. That's the heart of "green chemistry," often defined as "the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture and application of chemical products."

Their article describes a guide on doing so for solvents, key ingredients in processes for making medicines. Some traditional processes generate 25-100 times more waste than the chemical they are making (e.g., pharmaceuticals). The solvents guide was developed by the ACS [Green Chemistry](#) Institute's Pharmaceutical Roundtable, a group of 14 pharmaceutical companies. The Green Solvents mobile app version of the guide for Apple devices covers 60 different solvents and is available online at <https://itunes.apple.com/us/app/green-solvents/id446670983?mt=8>, and the Lab Solvents app for Android devices is available online at <https://play.google.com/store/apps/details?id=com.mmi.android.labsolvents>.

More information: "Incorporating Green Chemistry Concepts into Mobile Chemistry Applications and Their Potential Uses", ACS *Sustainable Chem. Eng.*, 2013, 1 (1), pp 8–13. [DOI: 10.1021/sc3000509](https://doi.org/10.1021/sc3000509)

Abstract

Green Chemistry related information is generally proprietary, and papers on the topic are commonly behind pay walls that limit their accessibility. Several new mobile applications (apps) have been recently released for the Apple iOS platform, which incorporate green chemistry concepts. Because of the large number of people who now own a mobile device across all demographics, this population represents a highly novel way to communicate green chemistry, which has not previously been appreciated. We have made the American Chemical Society Green Chemistry Institute (ACS GCI) Pharmaceutical Roundtable Solvent

Selection Guide more accessible and have increased its visibility by creating a free mobile app for the Apple iOS platform called Green Solvents. We have also used this content for molecular similarity calculations using additional solvents to predict potential environmental and health categories, which could help in solvent selection. This approach predicted the correct waste or health class for over 60% of solvents when the Tanimoto similarity was >0.5 . Additional mobile apps that incorporate green chemistry content or concepts are also described including Open Drug Discovery Teams and Yield101. Making green chemistry information freely available or at very low cost via such apps is a paradigm shift that could be exploited by content providers and scientists to expose their green chemistry ideas to a larger audience.

Provided by American Chemical Society

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