

# Reactions at your fingertips



SANROS (STRATEGIC APPLICATIONS OF NAMED REACTIONS IN ORGANIC SYNTHESIS)

CREATED BY  
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PLATFORM: IPHONE, IPOD TOUCH.

ELSEVIER; 2012. 20.1 MB \$9.99

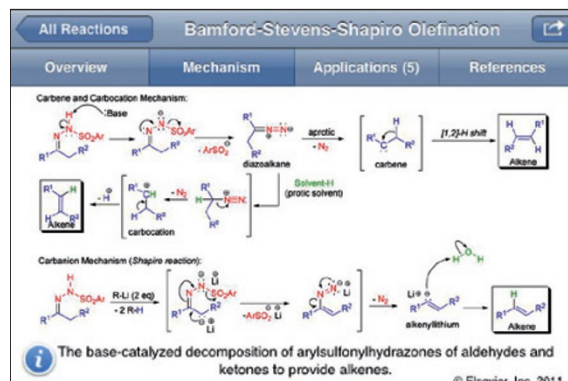
Smart phones and tablets have revolutionized how we communicate, access and use information, work, travel, play and learn. Chemistry education and the field of chemistry have not surprisingly been positively impacted by this technology as useful educational material, databases and other tools have been developed in recent years for chemists and chemistry students. Among the many important fields of chemistry, organic chemistry with its powerful graphical language seems perfectly matched to take advantage of the educational opportunities smart phones and tablets have to offer. Their high-resolution LCD display and touchscreen technology together with applications (apps), which are the most commonly used and popular features of mobile devices, makes drawing, presenting and interacting with organic structures trivial.

*Nature Chemistry* readers interested in organic chemistry might find the following selection of free or moderately priced apps focused on drawing (*ChemJuice* and *ChemDoodle*), organic synthesis (*Chemistry By Design*), 3D molecular viewing (*Molecules*, *Atomdroid* and *NKDMol*), compound searching (*ChemSpider*) and periodic table (*EMD PTE*) to be of interest. Although some specific content types or features of chemistry texts or references lend

themselves to being recreated in app format, it is far from clear that all would be suited for such a transition. An exciting and important exception is the new *Strategic Applications of Named Reactions in Organic Synthesis* (SANROS) app by László Kürti and Barbara Czako based on the popular book of the same name and published by Elsevier. The book version was already popular for its concise and masterful presentation of the most commonly used named reactions in organic chemistry, but immediate access to this valuable source at your fingertips is only one of many benefits that make the app version more appealing than the printed one.

In many ways the app platform has allowed the book to come alive with the addition of several useful interactive and search features. For example, a list of more than 450 abbreviations of most frequently used reagents, solvents and catalysts can be searched and accessed at any time with the full chemical name and structure being displayed. Another useful feature is the ability to search by reaction categories (oxidations, rearrangements, ring expansions and so on) to find representative named reactions. My personal favourite is a new feature called Specify Transformation, which allows the user to search the 250 named reactions by initial and/or target functional group (allene, diene, epoxide and so on). I found myself searching for 'allene' as a target functional group and was delighted in rediscovering Doering-La Flamme allene synthesis, a fantastic reaction.

The features that have made the textbook so popular are excellently translated to the app version. Clever colour mapping helps the reader to follow each reaction and its proposed mechanism, and the authors' thoughtfully selected synthetic applications are just as successful as they were for the book. It is in the reference section where new advances have been made by adding a clickable DOI link for each publication, thus enabling the user to go directly to the primary source. Not surprisingly, the small iPhone



screen poses challenges for displaying certain busy overview and mechanism windows (see Bamford–Stevens–Shapiro olefination screenshot) in a way that is comfortable to read and view. This challenge is nicely solved by allowing the user to zoom in at will by simply tapping twice on the image they wish to view more closely. Currently SANROS is available from the App Store in a free version that features 25 named reactions with the remaining 225 reactions available in the full version (\$9.99). This app is absolutely fantastic and a must-have companion for synthetic organic chemists.

**The app platform has allowed the book to come alive with several useful interactive features.**

My only reservation is that I wish it was priced more moderately to make it more attractive to undergraduate and graduate students as well as post-doctoral fellows in the field. I eagerly await the launch of the full iPad version and I certainly hope that an android version of SANROS will be launched soon so that the armies of Android and PC-device users will be able to enjoy this wonderful app. It is important to note that SANROS is not the only app product on the market that tackles named reactions: an elaborate app called *NAMED REACTIONS PRO* from Synthetiq Solutions is also available from the App Store (\$9.99).

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