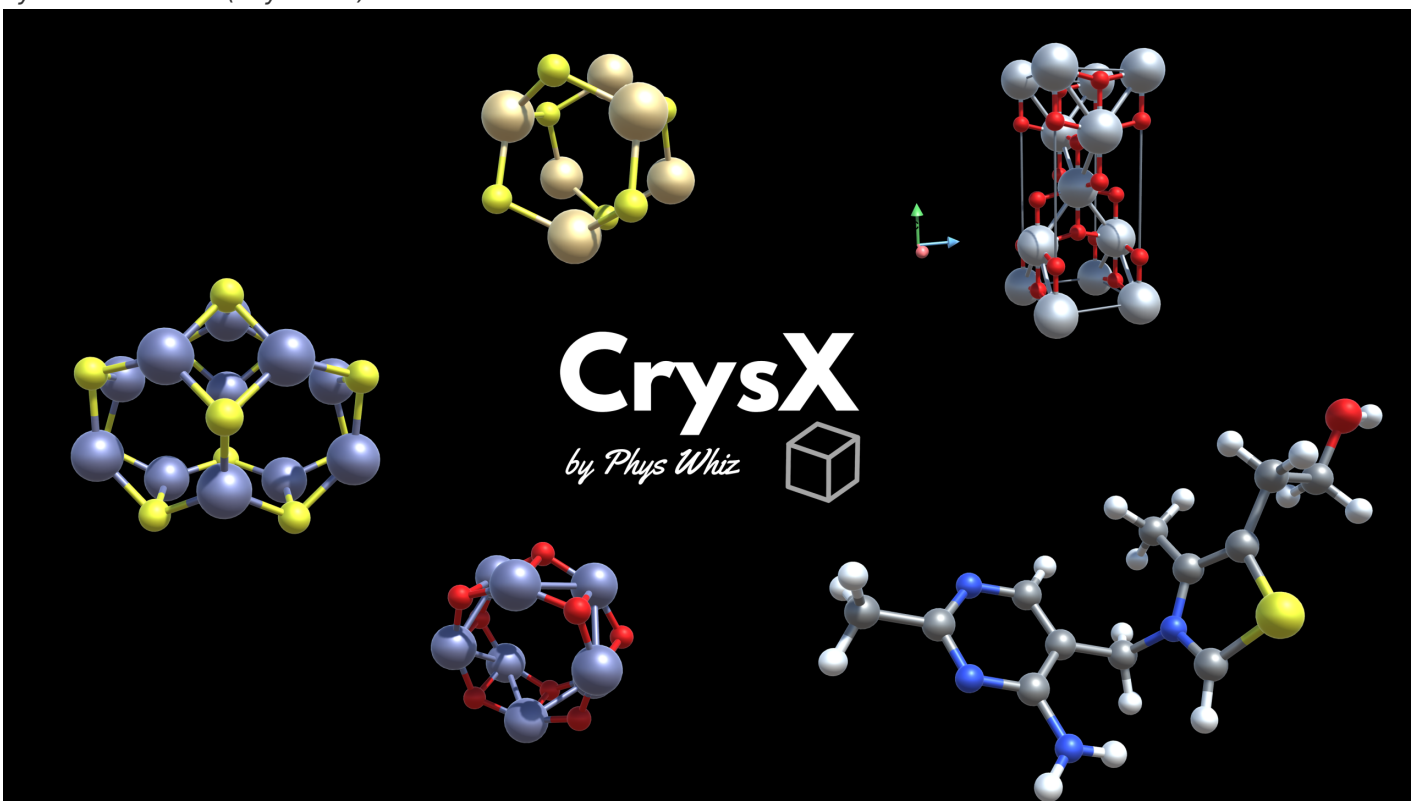
*by Manas Sharma (Phys Whiz)*




*CrysX* is a set of tools available as smartphone (Android), desktop (Windows, Linux, MacOS X) or web applications. The tools are extremely handy for students, researchers, and teachers working in the fields of crystallography, computational material science or computational chemistry. Computer softwares have long been used by crystallographers and computational material scientists to assist them in research. However, most of these softwares are only limited to traditional computer based operating systems such as Linux, Windows and MacOS. Nowadays, when smartphones have become an integral part of everyone's life and their processing power easily matches that of home computers from a decade ago, it would be highly favorable to have such applications on tablets and mobile devices. Moreover, the easy-to-use interface along with high-quality tutorials makes using the apps really easy and makes a strong case for use as teaching aids in various courses such as solid state physics, nanoscience, etc. Furthermore, a lot of the tools are provided as web apps, making them truly cross-platform.

CrysX is always under development and regularly gets updates with newer features and bug-fixes. In addition to the currently available tools and apps, newer tools are always being developed and will be available for download from this page.

Currently, CrysX consists of three major tools/apps available on various platforms:

1. *CrysX: Crystallographic Tools (parent app) (only on Android)*
2. *CrysX- 3D Viewer (Visualizer; available on Android, Linux, Windows, and Macs)*
3. *CrysX- AR (only on Android)*
4. *CrysX- Demos (online)*
5. *CrysX- Web apps (online)*

# CrysX: Crystallographic Tools

This app contains a variety of tools that might come in handy for those studying periodic crystal systems. It contains tools for Powder X-Ray Diffraction Simulation, Equation of State Fittings, Space Group decoding, Crystallite Size Calculation, etc.

## Download Links:

Android: APK / Play Store: https://play.google.com/store/apps/details?id=com.bragitoff.powderdiffractionsimulator

Windows: NA

Linux: NA

## Screenshots:

This slideshow requires JavaScript.

## Documentation:

Click Here

## YouTube Tutorials:

# CrysX: 3D Viewer

The crystal visualizer tool is available for *Windows*, *Mac, Android* and *Linux* devices. The visualizer enables the users to open popular *.cif* format files, to visualize the *crystal structures* of any compound. Even *molecular structures* can be visualized by opening either of the popular formats are *.xyz* and *.mol*. The visualizer is built using a gaming engine (Unity3d) ensuring *stellar, never-before seen graphics* on any other molecule/crystal visualizer. This makes the app really useful for researchers to *prepare illustrations* and figures for their research papers, thesis and dissertation. The app lets the users visualize lattice planes, and draw vectors to indicate electric/magnetic fields. Users can model *supercells*, *monolayers* (thin film/quantum well) or *quantum dots.* One can also edit the structures to create a *vacancy* or introduce an *impurity*. There is also a feature that lets you draw your own *custom 3D molecule/ nanocluster*. Structures can also be analyzed by measuring the bond angles and lengths. Although, the app is quite straight-forward to use, high quality YouTube tutorials and documentation will get you up to speed in no time. If you find a bug or have any queries or want to request a feature you can post your question here: *http://physwhiz.bragitoff.com* with the tag '*CrysX*'.

## Download Links:

Android: APK / Play Store: https://play.google.com/store/apps/details?id=com.bragitoff.CrysXViewer

Windows: 64-bit Installer: https://www.bragitoff.com/crysx-3d-viewer/

Linux: CrysX-3D_Viewer_x86_64_linux , CrysX-3D_Viewer_x86_linux

## Screenshots:

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## Documentation:

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## YouTube Tutorials:

# CrysX – AR

CrysX – AR is an Android app that let's you visualize molecules and crystals in Augmented Reality. The tool is powered by Google ARCore. The app can open .cif and .xyz files. This tool can help you make your poster presentations stand apart. Even classroom presentations can be made more intuitive.

## Download Links:

Android: APK / Play Store: https://play.google.com/store/apps/details?id=com.bragitoff.crysxar

## Screenshots:

This slideshow requires JavaScript.

## Documentation:

Click Here

## YouTube Tutorials:

# CrysX – DEMOs

Through CrysX DEMOs, we provide online interactive demos of various concepts found in the field of computational material science or computational chemistry through web apps powered by streamlit or other user-friendly frameworks.

## Links:

# CrysX – Web Apps

## Links: