

LANDYNE

User Manual

Introduction of Installation and the Launcher

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Table of Contents

1. Landyne suite	2
2. Installation	2
2.1 Download	2
2.2 PC setup	3
2.3 Subfolders	3
2.4 Licenses	3
3. The launcher	4
4. Contact and feedback	5

1. Landyne suite

Landyne (computer software & graphic design) was registered in 2010 by X.Z. Li and Jane Li in Lincoln, NE. We developed a software suite for electron diffraction simulation and crystallographic analysis. The software suite is provided as a practical tool for TEM-related research work and for teaching electron microscopy and crystallography.

The components in the software suite can be classified into three categories according to their functionality, as shown in Figure 1.

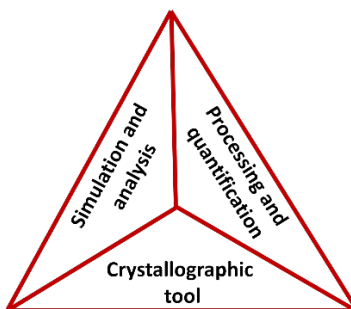


Figure 1. Categories according to the functionality of the components in the Landyne suite.

2. Installation

2.1 Download

Landyne suite in a compressed file, landyne5x.7z, can be downloaded from the following websites,

<https://landyne.com>

<https://www.unl.edu/ncmn-enif/xzli/computer-programs>

USB flash drive preloaded with the Landyne suite, and licenses are also available. The suite includes the Landyne launcher and components. Decompress the landyne5x.7z to a landyne5x folder, which includes SVAT, SAED, PCED, SPICA, SAKI, TEMUC, QSAED, QPCED, HOLZ, SMART, CTFscope, ESPOT, EMIPA, EMCIP.

2.2 PC setup

Check if the recent version of Java Runtime Environment (JRE) is installed on your PC. In the command prompt console, type `java -version`. It shows “java version 1.8.0_xxx” or a higher version, which means that the recent JRE is installed. Otherwise, download the JRE from the Java website and complete the installation.

The Java Advanced Image (JAI) package is needed to handle TIFF images. Download the package from the Java website. For the convenience for users, JAI-1_1_3-LIB.zip is also available in <https://www.unl.edu/ncmn-enif/xzli/download/>. Decompose the package and copy `jai_core.jar` and `jai_codec.jar` in the JRE folder, *e.g.*, `(your java)\jre1.8.0_31\lib\ext\`.

2.3 Subfolders

File compress tools, *i.e.*, 7-zip, WinRAR, and WinZip, can be used for decompressing the downloaded file. When the landyne5.7z file is decompressed into *e.g.*, `c:\landyne5x\`, it includes the following subfolders,

- Documents (subfolder): The user manuals are available for each of the software components listed above.
- Programs (subfolder): All jar files and landyne.exe and user manuals are saved here. The user may create a shortcut of the landyne.exe and move the shortcut to the desktop. Please copy the licenses to this folder.
- Structures (subfolder): Users should save all structural data in this folder.
- Experiments (subfolder): Users should put the observed electron diffraction patterns and microscopy images in this folder.
- Results (subfolder): Users should save all the results in this folder and move/organize files in this folder.

2.4 Licenses

Licenses are available from us (see the contact info below). Without the validated licenses, all software components work in demo mode. The cost for time-period licenses is listed on our website. The cost of the perpetual licenses and various discounts are available upon request via email.

Serial number (SN) of your PC (hard drive) or a USB flash drive is required in the preparation of the licenses. You should retrieve the SN as below. First, you may use any component in the Landyne suite, e.g., SVAT; you click Demo to continue if you don't have a license yet. Then choose Help and then Current Drive. A dialog window will pop out, which shows your current drive's SN.

After you send us the SN of your PC (hard drive) or a USB flash drive and the payments for the licenses, we will provide you the license keys; then you should copy the license keys to the "landyn5x\programs\" subfolder, where landyne5x.exe and all the .jar files locate. Now, you are ready to use the Landyne5x.

3. The launcher

Landyne Launcher is designed to organize all software components within a unified graphic interface for using the Landyne suite. Although all the components are standalone software, the combination will provide much more power than each software alone in research works.

The landyne launcher is released by clicking the landyne.exe. Create a shortcut of landyne.exe and move it to the desktop; the icon of the Landyne launcher is shown in Figure 2. Then, you can easily access the Landyne launcher. Move the mouse pointer on the Landyne icon and hold the left mouse button to move the launcher to a new location on the monitor.



Figure 2. The icon of the Landyne launcher.

Click the right mouse button on the Landyne icon to access the preference dialog in Figure 3. In this dialog, the user may define the preference of the launcher: 1) Always on the top layer, 2) the size to be chosen, and 3) the selection of components in the launcher. The configuration will be saved in a .cfg file and reloaded when the landyne.exe restarts next time.

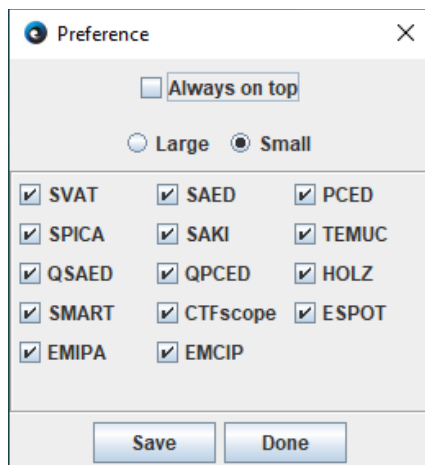


Figure 3. Preference dialog for the selection of the Landyne components.

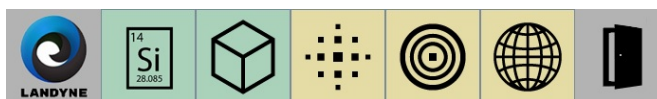


Figure 4. Landyne Launcher with user-selected components.

Compared to the launcher in the long form (on the top of the page), the launcher can be set in a short form according to the user's choice in Figure 4. Double-clicking each icon of the components on the launcher will give access to the software component. Click the exit to quit the launcher. The user manuals for all the components are available in the download file.

4. Contact and feedback

Please get in touch with Dr. X.-Z. Li (jlandyne@gmail.com) for software information. Suggestions and comments are welcome.

The software suite will be continuously upgraded to include improving user manuals, adding more functions, and enhancing with a more user-friendly graphics interface, so checking our website regularly for the new release is recommended.