

LANDYNE

User Manual

Installation of the Landyne Suite with a Launcher

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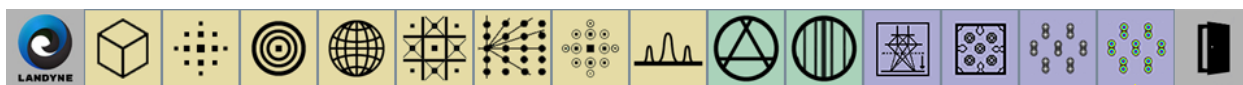


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1. Landyne suite

Landyne, established in 2010 by X.Z. Li and Jane Li in Lincoln, NE, specializes in computer software & graphic design. We have developed a comprehensive software suite on electron diffraction simulation and electron microscopy image processing for crystallographic analysis. The suite serves as a valuable tool for TEM-related research and educational purposes in electron microscopy and crystallography.

The components within the Landyne suite are organized into three distinct categories based on their functionality, as shown in Figure 1.

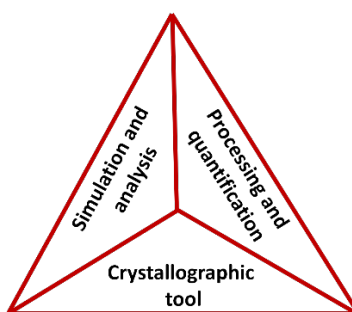


Figure 1. Categories according to the functionality of the components in the Landyne suite.

2. Installation

2.1 Download

The Landyne suite, packaged as a compressed file, landyne6.7z, can be downloaded from the following websites,

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

Alternatively, USB flash drives preloaded with the Landyne suite, and licenses are also available. The suite includes a Landyne launcher and software components. Once downloaded, decompress the landyne6.7z to a directory (e.g., landyne6), which contains the following components: SVAT, SAED, PCED, SPICA, SAKI, TEMUC, QSAED, QPCED, HOLZ, SMART, CTFscope, ESPOT, EMIPA and EMCIP.

2.2 PC setup

Before installation, ensure that the latest version of the open-source JDK (Java Development Kit) is installed on your PC. You can verify this by opening a command prompt console, and typing “java -version”. If the console displays “openjdk version “21.0.3” or a higher version, OpenJDK is installed. Otherwise, download and install the OpenJDK software.

2.3 Subfolders

Use file compression tools such as 7-zip, WinRAR, and WinZip to decompress the downloaded landyne6.7z file. Once decompressed (e.g., to “c:\landyne6\”), it will contain the following subfolders:

- Documents: Contains user manuals for each software component listed above.
- Programs: Includes all .jar files, landyne.exe and user manuals. You can create a desktop shortcut for landyne.exe and place licenses in this folder.
- Structures: Save all structural data in this folder.
- Experiments: Store observed electron diffraction patterns and microscopy images here.
- Results: Save and organize all the results in this folder.

2.4 Licenses

To activate the software beyond demo mode, licenses are required and can be obtained from Landyne (contact info below). Without valid licenses, software components operate in demo mode.

Information on costs for time-period licenses is available on the Landyne website, while perpetual licenses costs and discounts can be requested via email.

When obtaining a license, you'll need the serial number (SN) of your PC's hard drive or a USB flash drive. Retrieve this SN by using any Landyne component (e.g., SVAT), clicking "Demo" if no license is present, then selecting "Help" and then "Current Drive". A dialogue window will display your current drive's SN.

After submitting your PC's SN and completing payment for licenses, you will receive license keys. Copy these keys to the "landyn6\programs\" subfolder, where landyne6.exe and all the .jar files are located. You are now ready to use Lanyne6.

3. The launcher

3.1 Usage

The Landyne Launcher consolidates all software components into a unified graphic interface for efficient utilization of the Landyne suite. While each component operates independently, their integration enhances their collective utility in research endeavors.

To launch the landyne suite, execute "landyne.exe". Create a shortcut of "landyne.exe" for convenient access; the launcher's icon is depicted in Figure 2. From there, you can easily open the Landyne Launcher. Position the launcher on your monitor by clicking and dragging the icon to your desired location.



Figure 2. The icon of the Landyne launcher.

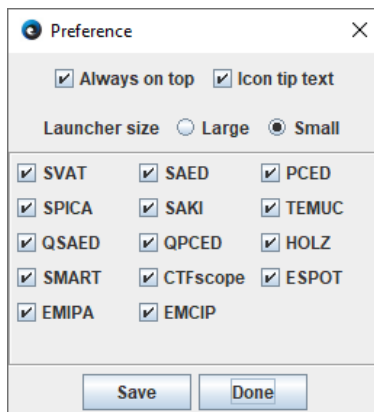


Figure 3. Preference dialogue for the selection of the Landyne components.

3.2 Configuration

To customize the Landyne launcher, right-click on the Landyne icon to open the preference dialog, as shown in Figure 3. Here, users can adjust the following preferences:

- 1) Always on top: Ensures that launcher remains visible.
- 2) Icon Tooltip: Displays text tooltips for component identification, see Figure 4; can be toggled off once familiar.
- 3) Launcher size: Adjust the size of the launcher interface.
- 4) Component Selection: Allows users to choose which components appear in the launcher, e.g., the launcher can be set in a short form according to the user's choice in Figure 5.

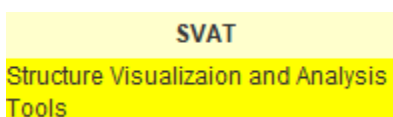


Figure 4. Text tooltip of SVAT, Structure Visualization and Analysis Tools.

These settings are saved in a .cfg file and will be restored the next time “landyne.exe” is launched. To access a software component, double-click its icon on the launcher. To exit the launcher, click the button with the door icon. User manuals for all the software components are available in the download folder.

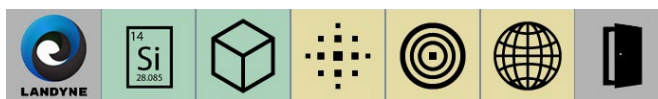


Figure 5. Landyne Launcher with user-selected components.

4. Contact and feedback

For further information about the software suite, please contact Dr. X.-Z. Li at jlandyne@gmail.com. We welcome your suggestions and comments.

The software suite will undergo continuous improvements, including enhanced user manuals, additional functions, and a more user-friendly graphics interface. We recommend checking our website regularly for updates on new releases.