

Is PICOLAY currently the simplest and smallest focus-stacking program in the world?

PICOLAY is **freeware** and needs just a **single file** (www.picolay.de/download.htm), only **3 MB** in size. Once unzipped, it runs on Windows computers without installation, and works portably from SSDs, SD cards, etc.

Simple stacking takes just 2 clicks:

1. To stack a series of images, simply drag them onto the PICOLAY icon to launch the program. Alternatively, start the program first and select the images under **File -> Add images**.

2. Then press **F1**, or click **Stack operations -> Simple focus stacking -> Go**

PICOLAY now runs a **quick test** (barely noticeable to the user) to **measure any shift and size changes** across the stack and compensate for them accordingly. The image analysis then runs, producing a stacked image whose creation you can watch on the right side of the screen; it appears in the image list on the left as 'py...' (plus a few parameters) and is saved in the folder containing the original images.

That's it - for minimalists :)

If the stacking result isn't perfect, press **F2** or click **Stack operations -> Expert focus stacking** to open the parameter window. There you can see the results of the **quick test** mentioned above and choose whether - and which - **changes in the stack (shift, size, rotation)** should be corrected. You can also choose a **filter set #** (from 1=XS = very fine structures to 5=XL = very large structures) and decide whether the filters should be mixed automatically (Smart) or stacked with a constant setting.

When searching for the best settings, PICOLAY now also helps in Expert mode through the '**Test region of interest**' feature: you select an interesting area of the image stack, and PICOLAY very quickly runs nine different test combinations on up to 32 images, showing the **stacked results and depth maps in two mosaic images**. Clicking on a tile in the mosaic then applies the parameters used for that tile.

Further settings - such as the minimum value for structure detection (Minimum score) to suppress noise, or preferring certain layers in the stack, etc. - are explained on the **PICOLAY website** (www.picolay.de), in the **manuals** (English, German, Italian, French, or Spanish, www.picolay.de/manuals.htm), the **quick reference** (www.picolay.de/picolay_helpfiles/tips_tricks_e.htm), or **YouTube videos** (www.youtube.com/@PICOLAY-videos/videos).

A bit of history

After 20 years of developing PICOLAY, I **retired as a programmer** last month. Instead, I have been promoted to **Program Director**, and leave the coding to **Claude (Anthropic)**, working to my instructions. We've made a lot of changes, some of which I could hardly have managed on my own:

- PICOLAY has got a **new logo**, showing five layers of the depth map - after all, 3D rendering is one of the program's standout features.
- PICOLAY now uses **multi-core processors in parallel**, making stacking noticeably faster. The Progress window shows CPU usage and memory consumption.
- The **background** is now dark grey, and the windows fill the **screen without any gaps**.
- The **interface has been tidied up**, with fewer overlapping windows.
- With '**Simple stacking**' (or **F1**), you can get a good stacked image with just two clicks, without having to worry about parameters.
- In **Expert mode**, finding good parameters is made easier by the alignment quick test and the trial run with a '**Region of interest**'.
- There are no more scroll bars along the image edges. You can **zoom by turning the mouse wheel**, and **pan the view with Shift + mouse** (or by holding down the middle mouse button).
- These movements work on **both the left and right images, and stay in sync** on both sides when Synopsis=ON.
- The undo function now lets you **undo up to 10 image-editing steps**.
- **Rectangles drawn with the mouse** now stay visible even on large images. The **rings around the mouse tool** also automatically adjust their thickness.
- Creating **3D images has been sped up** considerably by simplifying the underlying algorithm.

Further improvements are planned. The manuals etc. haven't been updated to the latest version yet. We want to enable new 3D features by integrating the Open Graphics Library (OpenGL). Even so, I'm putting the new program online now - well aware that it will contain bugs. I'd very much **welcome friendly feedback**, so they can be fixed...

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