

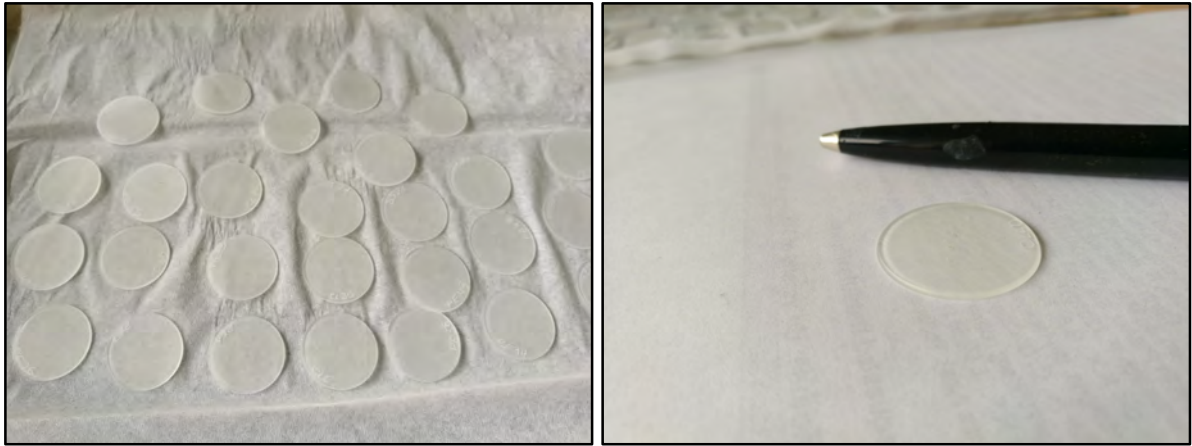
## Cutting of apatite fission-track mounts

- The mounts need to be cut down in their height to ~1 mm. The rims must also be cut to fit into the tubes for irradiation (a tube from the reactor is available to check if the mounts fit; picture below).
- Either the workshop can cut the mounts in their height, or, possibly quicker, the mounts can be grinded down using the polishing machine and coarse (e.g., # 240) grinding paper. Before cutting or grinding, scratch the sample ID (small) into the rim of the sample mount surface.



*Irradiation tube for testing whether the mount diameter and eventually a stack of mounts fit in. The black mark on the tube indicates how far the lid goes in. Make sure that the stack of mounts is not higher than this (the stack is sent without tube to the reactor facility). Otherwise, the stack cannot be removed from the tube without damage after irradiation. Photo: S. Falkowski.*

- When using the polishing machine: Use double-sided tape cut to the size of the mounts to stick the mounts to dummy mounts (available in the lab). Then put the mounts into the sample holder with the back side of the sample mounts onto the grinding paper. You need lots of water for this: connect the flexible tube to the tap and turn it, as well as the small, black tab on the right side of the polishing machine, on. Grind down the mounts to ~5 mm. Then you need to proceed manually to obtain even mounts. Use the “Manuelle Probenpräparation” (manual sample preparation) setting of the machine and turn on the water. Hold the dummy mount and grind down the sample mount to ~1 mm (If you make too thin, the mounts will break. If it is too thick, you will have problems cutting off the rims and fewer mounts will fit into one irradiation tube.). Remove the dummy mount and the sticky tape from the sample mount. Scratch the sample ID into the center of the back of the mount.
- To cut the diameter of the sample mount, you can use pincers available in the tool box in the lab. We chose a 20 mm-diameter hexagonal shape for the mounts that leaves the mount as large as possible while still fitting into the irradiation tube. If the mounts are too thick for cutting with pincers, you can use the polishing machine to grind down the rims.
- Clean the mounts with ethanol.



*Apatite fission-track mounts after grinding, polishing, and grinding them down in height. Photos: S. Falkowski.*



*Pincers for bringing mounts from their round into a hexagonal shape. Photo: S. Falkowski.*



*Apatite fission-track mounts after being cut into a hexagonal shape (20 mm diameter). The sample ID is scratched into the back of the mounts. Photos: S. Falkowski.*