



Pneumatic NMR tube spinner



bart

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updated 8. 10. 2022 | published 8. 10. 2022

Summary

This takes standard 5 mm NMR tubes and spins them using a lab compressed air supply. The rotation may not be...

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This was migrated from my Thingiverse profile and is from 2016.

This takes standard 5 mm NMR tubes and spins them using a lab compressed air supply. The rotation may not be particularly smooth, although this can probably be improved on if the inside of the pneumatic spinner and tube holder are polished smooth.

See videos below.

This was used extensively for infrared photochemistry work where the spinning sample was irradiated with an infrared source (see video below). Spinning the sample causes mixing and ensures the entire sample volume receives approximately equal exposure. Irregular rotation (occasional stops and starts) actually probably improves mixing.

The optional reflector is inspired by the design of a [Coblentz sphere](#). The present reflector is by no means an ideal design: the opening to the sphere is tailored to the diameter of the infrared source I was using, and coating the inside with crumpled aluminium foil does certainly not provide for optimal focusing of radiation which missed the NMR tube on the first pass back to the tube. But it probably increases the fraction of emitted radiation incident on the sample to some extent and it can't hurt. The reflector sphere can of course be omitted (e.g. if you're using a source with a more suitable geometry).

Print Settings

Printer Brand:

RepRap

Printer:

Ormerod 2

Rafts:

No

Supports:

No

How I Designed This

Designed in OpenSCAD, sliced with Slic3r.

Custom Section

Model files



nmr_tube_spinner_v2_everything.stl

[Find source .stl files on Thingiverse.com](#)

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