

Abstract Submitted
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Design of Two-Axis Helmholtz Coils Microscope Insert WILL THOMPSON, MEGHAN SMITH, KATHRIN SPENDIER, Univ Colorado - Colorado Springs — Two pairs of Helmholtz coils were designed to generate an oscillation magnetic field (B-Field) over a volume of 1.0 cm^3 to rotate magnetic particles. The maximum B-field amplitude is approximately 10 mT. The B-field oscillation frequency ranges from 0 – 1000 Hz. The two coil pairs are designed to fit in Leica's DMI6000 and DMI3000 inverted microscopes. This insert allows us to image rotating magnetic nanoparticles with high spatial and temporal resolution. This poster will show details of the prototype's coil design. The insert was designed in SOLIDWORKS and parts were 3D printed. A manual wire winder was used to wind the magnetic wire on the coils. We are currently testing the performance of this prototype. Our goal is to redesign our current insert to eventually achieve B-field amplitudes of up to 50 mT. We also plan to make the coil design available to other researchers in the future.

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