

# Publications

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## Recent Publications

Shao H.\*, Chung J.\*, Lee K., Balaj L., Min C., Carter B. S., Hochberg F. H., Breakefield X. O., Lee H., Weissleder R. Chip-based analysis of exosomal mRNA mediating drug resistance in glioblastoma.

***Nat Commun*** 6, 6999 (2015).

Im H., Shao H., Weissleder R., Castro C. M., Lee H.

Nano-plasmonic exosome diagnostics.

***Expert Rev Mol Diagnostics*** 15, 725-733 (2015).

Im H.\*, Castro C. M.\*, Shao H., Liong M., Song J., Pathania D., Fexon L., Min C., Avila-Wallace M., Zurkiya O., Rho J., Magaoay B., Tambouret R. H., Pivovarov M., Weissleder R., Lee H.

Digital diffraction analysis enables low-cost molecular diagnostics on a smartphone.

***Proc Natl Acad Sci USA***. 122, 5613-5618 (2015).

Lee K., Shao H., Weissleder R., Lee H.

Acoustic purification of extracellular microvesicles.

***ACS Nano*** 9, 2321-2327 (2015).

Im H.\*, Shao H.\*, Park Y., Peterson V. M., Castro C. M., Weissleder R., Lee H.

Label-free detection and molecular profiling of exosomes with a nano-plasmonic sensor.

***Nat Biotechnol*** 32, 490-495 (2014).

\*Equal contributions.

Issadore D., Park Y., Shao H., Min C., Lee K., Liong M., Weissleder R., Lee H.

Magnetic sensing technology for molecular analyses.

***Lab Chip*** 14, 2385-2397 (2014).

Yoon T. J., Shao H., Weissleder R., Lee H.

Oxidation kinetics and magnetic properties of elemental iron nanoparticles.

***Part Part Cyst Charact*** 30, 667-671 (2013).

Rho J., Chung J., Im H., Liong M., Shao H., Castro C. M., Weissleder R., Lee H.

Magnetic nanosensor for detection and profiling of erythrocyte-derived microvesicles.

***ACS Nano*** 7, 11227-11233 (2013).

Castro C. M., Ghazani A. A., Chung J., Shao H., Issadore D., Yoon T. J., Weissleder R., Lee H.

Miniaturized nuclear magnetic resonance platform for detection and profiling of circulating tumor cells.

**Lab Chip** 14, 14-23 (2013).

Shao H., Chung J., Balaj L., Charest A., Bigner D. D., Carter B. S., Hochberg F. H., Breakefield X. O., Weissleder R., Lee H.

Protein typing of circulating microvesicles allows real-time monitoring of glioblastoma therapy.

**Nat Med** 18, 1835-1840 (2012).

Featured by BBC News, recommended by Faculty of 1000, and highlighted in:

1. Glioblastoma: microvesicles as major biomarkers.

**Nat Rev Cancer** 13, 8 (2013).

2. Biomarkers: nanotechnology opens up new realm of detection in GBM.

**Nat Rev Clin Oncol** 10, 4 (2013).

3. Neuro-oncology: Glioblastoma detection and therapy monitoring by microvesicle release.

**Nat Rev Neurol** 9, 4 (2013).

Chung J.\*, Shao H.\*, Reiner T., Issadore D., Weissleder R., Lee H.

Cell sorting: microfluidic cell sorter (FCS) for on-chip capture and analysis of single cells.

**Adv Healthc Mater** 1, 432-436 (2012), featured as cover.

\*Equal contributions.

Issadore D., Chung J.\*, Shao H.\*, Liong M., Ghazani A. A., Castro C. M., Weissleder R., Lee H.

Ultrasensitive clinical enumeration of rare cells ex vivo using a micro-hall detector.

**Sci Transl Med** 4, 141ra92 (2012), featured as cover.

\*Equal contributions.

Min C., Shao H., Liong M., Yoon T. J., Weissleder R., Lee H.

Mechanism of magnetic relaxation switching sensing.

**ACS Nano** 6, 6821-6828 (2012).

Shao H., Min C., Issadore D., Liong M., Yoon T. J., Weissleder R., Lee H.

Magnetic nanoparticles and microNMR for diagnostic applications.

*Theranostics* 2, 55-65 (2012).

Yoon T. J.\*, Lee H.\*, Shao H., Hilderbrand S. A., Weissleder R.

Multicore assemblies potentiate magnetic properties of biomagnetic nanoparticles.

*Adv Mater* 23, 4793-4797 (2011).

Yoon T. J.\*, Lee H.\*, Shao H., Weissleder R.

Highly magnetic core-shell nanoparticles with a unique magnetization mechanism.

*Angew Chem Int Ed Engl* 50, 4663-4666 (2011).

Erathodiyil N., Gu H., Shao H., Jiang J., Ying J. Y.

Enantioselective hydrogenation of  $\alpha$ -ketoesters over alkaloid-modified platinum nanowires.

*Green Chem* 13, 3070-3074 (2011).

Mao J., Cao X., Zhen J., Shao H., Gu H., Lu J. and Ying J. Y.

Facile synthesis of hybrid nanostructures from nanoparticles, nanorods and nanowires.

*J Mater Chem* 21, 11478-11481 (2011).

Shao H., Yoon T. J., Liong M., Weissleder R., Lee H.

Magnetic nanoparticles for biomedical NMR-based diagnostics.

*Beilstein J Nanotechnol* 1, 142-154 (2010).

Liong M., Shao H., Haun J. B., Lee H., Weissleder R.

Carboxymethylated polyvinyl alcohol stabilizes doped ferrofluids for biological applications.

*Adv Mater* 22, 5168-5172 (2010).

Issadore D., Shao H., Chung J., Newton A., Pittet M., Weissleder R., Lee H.

Self-assembled magnetic filter for highly efficient immunomagnetic separation.

*Lab Chip* 11, 147-151 (2010).

Jiang J., Gu H., Shao H., Devlin E., Papaefthymiou G. C., Ying J. Y.

Bifunctional Fe<sub>3</sub>O<sub>4</sub>-Ag heterodimer nanoparticles for two-photon fluorescence imaging and magnetic manipulation.

*Adv Mater* 20, 4403-4407 (2008).

Zhao J., Wu J., Shao H., Kong F., Jain N., Hunt G., Feigenson G. W.

Phase studies of model biomembranes: macroscopic coexistence of La and Lb, with light-

induced coexistence of La + Lo phases.

***Biochim Biophys Acta*** 1768, 2777-2786 (2007).