What is claimed is:

1. A method, comprising:

injecting an optical tracer at a first location in a reservoir, wherein the optical tracer comprises a magnetic surface-enhanced Raman scattering (SERS) nanoparticle that is embedded with organic Raman markers, and the optical tracer mixes with subsurface fluid in the reservoir;

collecting fluid samples at a second location in the reservoir;

applying a magnetic field to the fluid samples; and

analyzing the fluid samples to detect a presence of the optical tracer in the fluid samples.

2. The method of claim 1, wherein the magnetic SERS nanoparticle includes a magnetic core particle that is incorporated into a non-magnetic particle shell, the non-magnetic particle shell being decorated with metallic particles.

3. The method of claim 2, wherein the magnetic core particle comprises at least one of an Fe_3O_4, γ-Fe_2O_3, $MnFe_2O_4$, or $CoFe_2O_4$ particle.

4. The method of claim 2, wherein the metallic particles comprise at least one of an Ag or Au particle.

5. The method of claim 2, wherein the non-magnetic particle shell comprises SiO_2.

6. The method of claim 2, wherein the magnetic SERS nanoparticle is synthesized using $FeCl_3 \cdot 6H_2O$ and $FeSO_4 \cdot 7H_2O$.

7. The method of claim 2, wherein the magnetic SERS nanoparticle is synthesized using $FeCl_2 \cdot 4H_2O$ and $FeSO_4 \cdot 7H_2O$.

8. The method of claim 2, wherein the magnetic SERS nanoparticle is synthesized using microemulsion that contains IGEPAL CO-720 and cyclohexane.

9. The method of claim 2, wherein the magnetic SERS nanoparticle is synthesized using

triethoxysilane and tetraethyl orthosilicate (TEOS).

10. The method of claim 2, wherein the magnetic SERS nanoparticle is synthesized by adding $AgNO_3$ into M $NaBH_4$.