Errata

Calculation of the Mie scattering field inside and outside a coated spherical particle

Suzuki and Lee

An error was discovered in our paper published in this Journal (Suzuki and Lee, 2008). The second term in the numerator of Equation (9) should read $-m_2 \, x \, B_n \, \chi_{n-1}(x_2)$ instead of $-m_2 \, x \, B_n \, \chi_n(x_2)$. Because of this error, the data in Figures should also be corrected as shown below. The discussion in the original paper mostly remains valid, except that:

1. The intensity distribution in the nanoshell is not uniform but rather anisotropic.

2. The intensity and the absorbed energy density in the microshell are high due to a surface plasmon resonance.

3. Only the intensity for the outside field is shown in Figures 2a and 2c.

   We thank Nate Lawrence (Boston University) for pointing out the error.

References

Suzuki H, Lee IYS (2008). Calculation of the Mie scattering field inside and outside a coated spherical particle. Int. J. Phys. Sci. 3: 38-41.
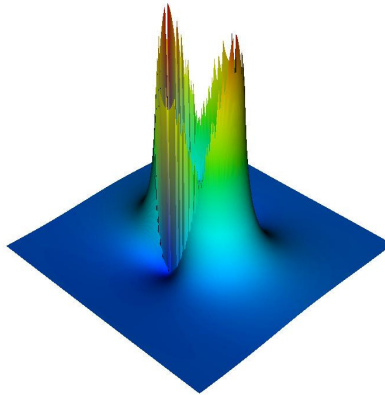
Figure 1: Intensity distribution of a nanoshell irradiated at 1064 nm in water. The nanoshell has a silica core with a diameter of 100 nm and a 10 nm thick silver shell.
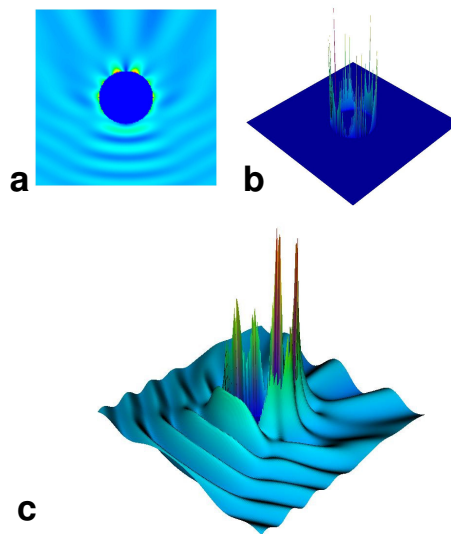

a

b

c

Figure 2. Intensity distribution of a silica-silver microshell irradiated at 1064 nm in water, with a core diameter of 1 μm and a shell thickness of 100 nm. (a) Colored surface map of intensity. The incident direction is from bottom to top. (b) Distribution of the absorbed energy density. (c) Three-dimensional map of intensity inside and outside the microshell

The author and the IJPS regret the error.