Plasmono-magnetic Material for Precise Photothermal Heating

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SUPPLEMENTARY INFORMATION
Temperatures of the suspensions of the magnetic beads decorated with gold nanocages was determined using a transfer function with the values shown in Table 1 and plot in figure S1. The relationship between image luminosity and the temperature can be described using equation (1). The luminosity $L$ at any given temperature is a function of the minimum luminosity ($L_2$), maximum luminosity ($L_1$) and the transition constants. Transition temperature, $T_t$ is the center of the linear slope where maximum luminosity change occurs over temperature change $dT$.

**Table S1.** The luminosity $L_1$ at 25 °C and $L_2$ at 42 °C extracted from the Figure 3. The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S1.

| Temperature (°C) | Luminosity (a.u.) |
|-----------------|-------------------|
| Maximum         |                   |
| 42              | **38.00**         |
| 41              | 38.01             |
| 40              | 38.03             |
| 39              | 38.09             |
| 38              | 38.24             |
| 37              | 38.65             |
| 36              | 39.75             |
| 35              | 42.56             |
| 34              | 49.19             |
| 33              | 62.07             |
| 32              | 79.77             |
| 31              | 95.25             |
| 30              | **104.29**        |
| 29              | 108.38            |
| 28              | 110.01            |
| 27              | 110.63            |
| 26              | 110.86            |
| Minimum         | **111.00**        |

$L_1$ (Maximum)
**Figure S1.** The luminosity-temperature transfer function for the experiment shown in Figure 3 corresponding to the data from Table S1.