Trimeric plasmonic molecules: the role of symmetry

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SUPPORTING INFORMATION

Figure S1. Simulated electric field plots corresponding to the charge plots shown in Fig. 1. The field magnitude is normalized to its maximal value in each case. Left column – transverse polarization of excitation light, right column – longitudinal polarization of excitation light. The plots are simulated for resonant excitation at: panel A – 645 nm (left), 645 nm (right); panel B – 625 nm (left), 710 nm (right); panel C – 610 nm (left), 725 nm (right); panel D – 600 nm (left), 745 nm (right). Note the logarithmic scale of the color code. Interestingly, for excitation of the D_{3h} symmetry cluster with both transverse and longitudinal light polarization (panel A), only two out of three gaps between the nanoparticles are “hot”. This is a result of the mode structure of the plasmon excitation discussed in the paper. Obviously, a different pair of gaps may be selected by rotating the light polarization by $2\pi/3$.