

## Supporting Information

### **Spiked gold Nanotriangles: Formation, characterization and applications in surface-enhanced Raman spectroscopy and plasmon-enhanced catalysis**

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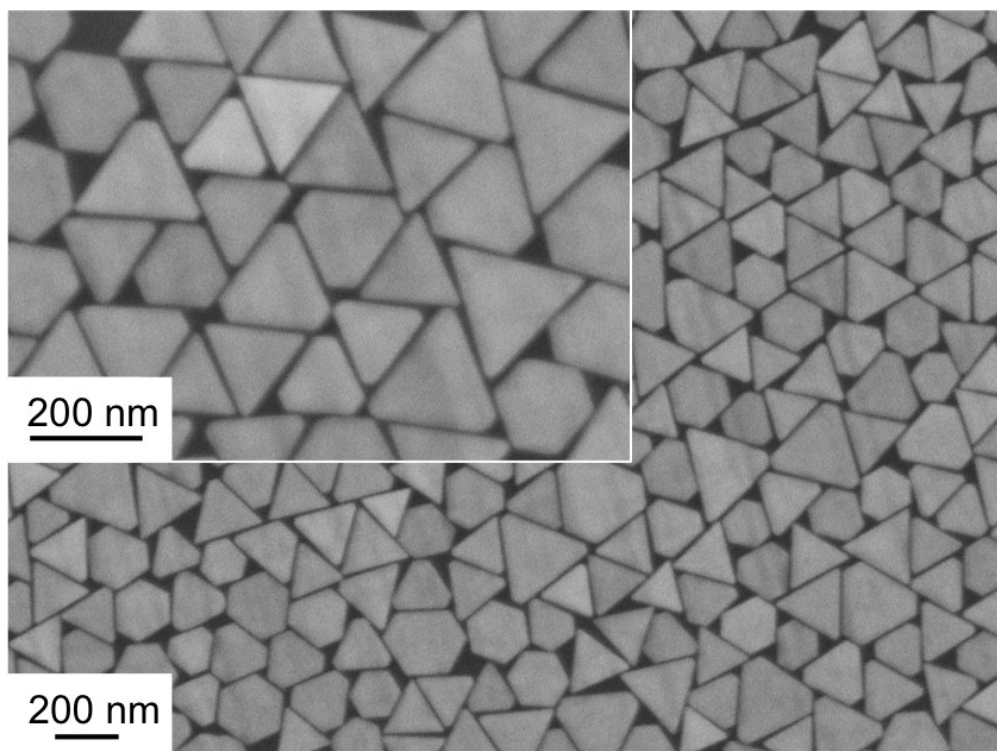
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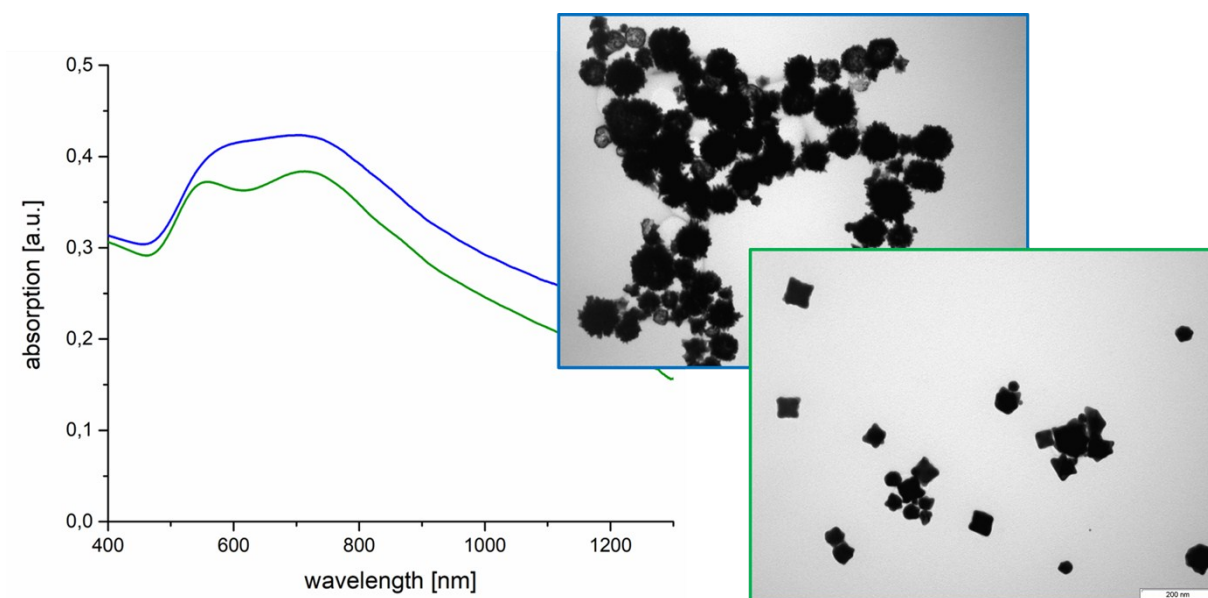
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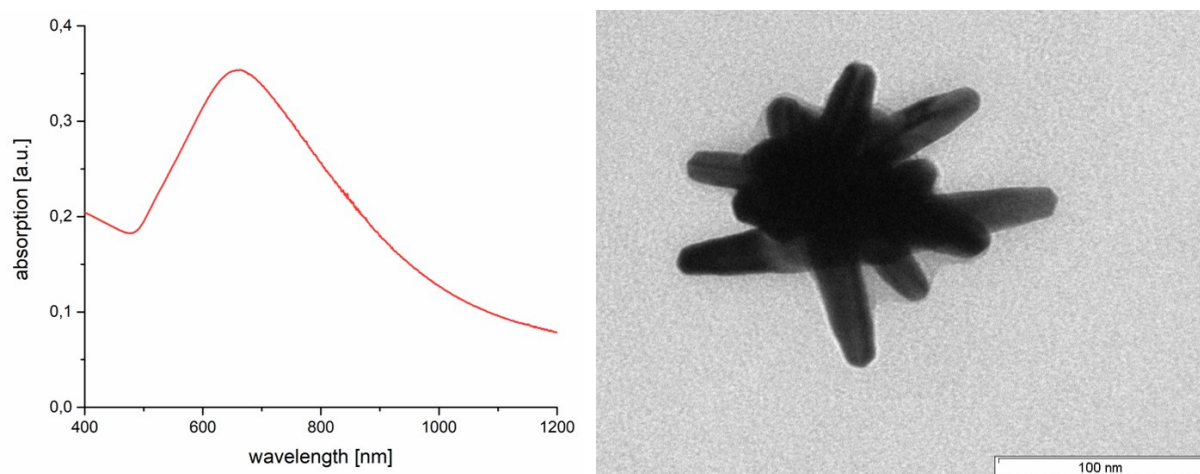
E-mail: koetz@uni-potsdam.de



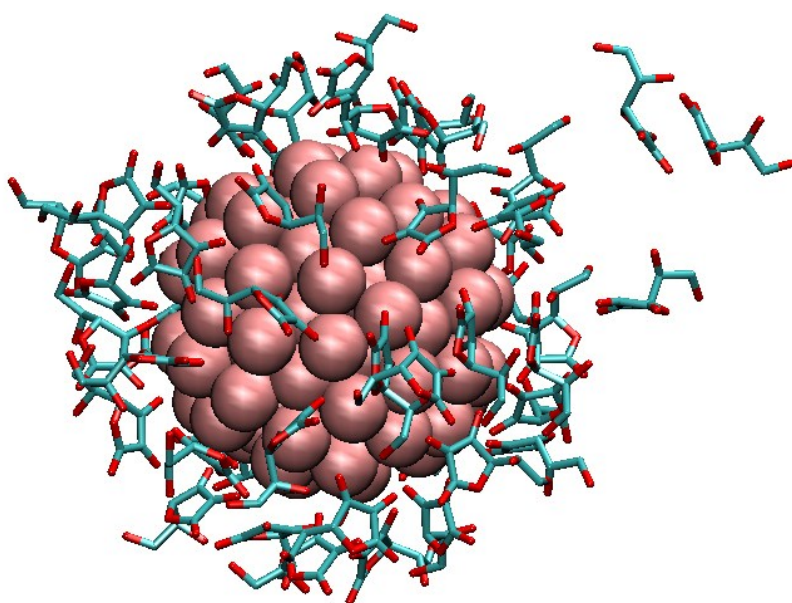
**Fig. S1** Low magnification SEM micrographs of gold nanoplatelets synthesized in the AOT/phospholipid-based template phase closely packed in a “perfect” monolayer on a Si substrate.



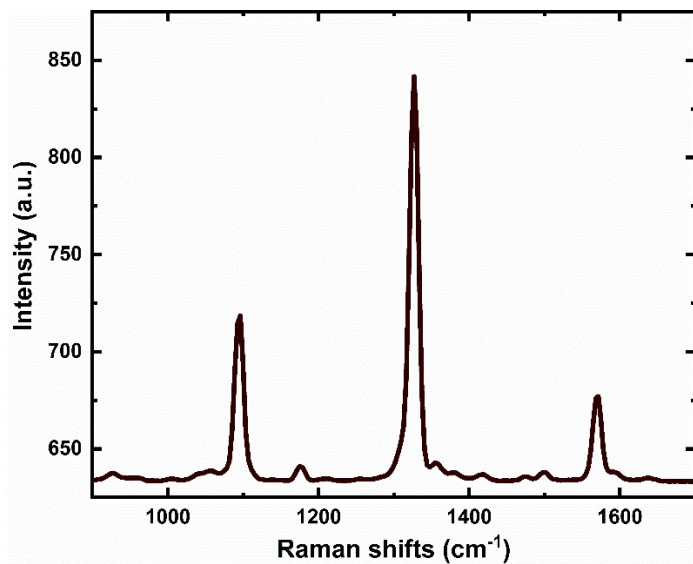
**Fig. S2** TEM micrograph and the corresponding UV-vis-NIR spectrum of gold nanoparticles synthesized by the reduction of  $\text{HAuCl}_4$  with AA in presence (blue) and absence (green) of  $\text{AgNO}_3$ .



**Fig. S3** TEM micrograph of a gold nanostar and the corresponding UV-vis-NIR spectrum synthesized in a concentrated AOT solution.



**Fig. S4** Snapshot of AA molecules adsorbed at the surface of a gold cluster. The corresponding colors are: cyan – AA carbon, red – AA oxygen, pink – gold surface. The gold atoms are rendered as sphere, the water molecules and hydrogen atoms were omitted for clarity, imitated via VMD package.<sup>36</sup>



**Fig. S5** Raman signatures of the neat 4-NTP molecules.