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Aluminum and Copper Nanostructures for Surface-enhanced Raman Spectroscopy: A One-to-one Comparison to Silver and Gold

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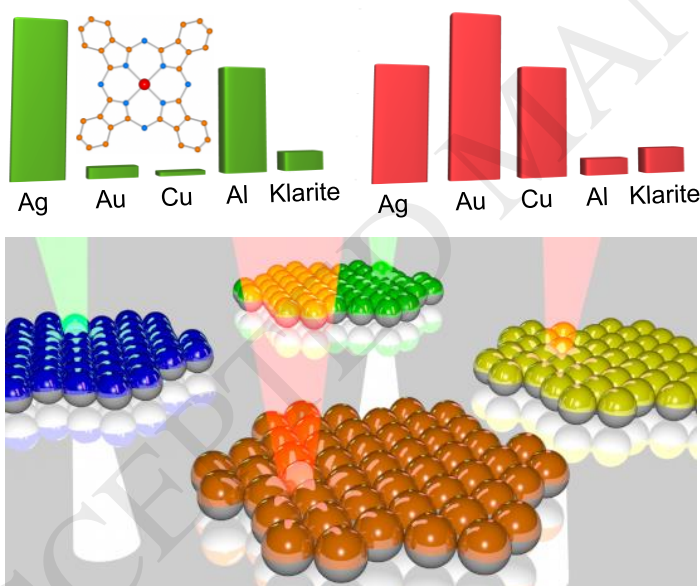
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Graphical abstract



Sensing applications with surface-enhanced Raman spectroscopy (SERS) can benefit from aluminum and copper. Self-assembled monolayers of nanospheres coated with copper and aluminum films produce controlled plasmonic nanostructures. When all other parameters are kept constant, copper and aluminum are found to be at the same level of SERS performance as nanostructures made with silver or gold. This finding opens the door to inexpensive large-scale development of SERS sensors.

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