

Abstract for an Invited Paper
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Plasmonics for data storage and photo-catalytic chemical reactor¹

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Applications of plasmonic effects for data storage and photo-catalytic chemical reactor will be discussed in this talk. Plasmonic near-field optical and thermal interactions are considered to be the novel methods to achieve ultrahigh capacity and density for data storage. The localized and enhanced electromagnetic field of plasmonic nanostructures provides ultrahigh spatial resolution for achieving nano recording marks size. The readout of nano recording marks closely relies on the plasmonic coupling effect as well. Responses of the local plasmonic nano-structures of the nano thin films are found to be the key of the nano storage. Similarly, local electromagnetic interactions of various plasmonic nanostructures for the photo-catalytic chemical process are useful as well. Measurement and analysis of the photo-catalytic process happened in the plasmonic photo-chemical reactors clearly demonstrate better efficiency of some photo-catalytic chemical process such as the decomposition of the Methyl Orange to carbon dioxide and water. Interesting and promising applications of the plasmonic nanostructures on data storage and photo-catalytic chemical reactor are demonstrated.

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