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**Modification of Metal Surfaces by Optically Active [7]Helicene Derivatives for Molecular Sensing.**

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## Modification of Metal Surfaces by Optically Active [7]Helicene Derivatives for Molecular Sensing

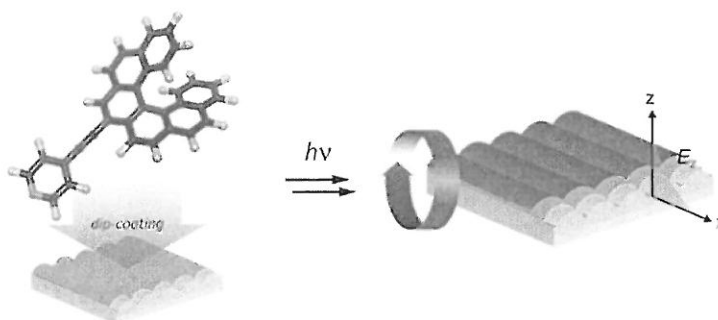
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Helicenes and their functional layers have a great application potential in many fields of research due to their unique electronic and chiroptical properties [1]. Although they were successfully applied in molecular recognition [2] and sensing [3], their use in surface plasmon polariton-based detection is exceptional indeed.

With regard to above mentioned fact, new derivatives of 9-(pyridylethynyl)[7]helicenes were firstly prepared and fully characterized in this study. Consequently, they were successfully separated to their (*P*)- and (*M*)-enantiomers using a preparative HPLC with chiral stationary phase. These optical antipodes were advantageously used for modification of silver plasmon active nanogratings suitable for a SERS-based detection of (bio)molecules. Properties of such nanostructures were studied using different spectro- and microscopic techniques. As proved by UV-Vis spectrometry, a change of plasmon resonance wavelength position and intensity was observed and indicated the appearance of chiral surface plasmon polarization (Fig. 1).

Fig. 1



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3 Storch, J.; Žádný, J.; Strašák, T.; Kubala, M.; Sýkora, J.; Dušek, M.; Církva, V.; Matějka, P.; Krbal, M.; Vacek, J. *Chem. Eur. J.* **2015**, 21, 2343.