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Abstract for an Invited Paper
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The Interaction of Chiral Electrons with Chiral Molecules and Chiral Surfaces – A Progress Report¹

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The status of our understanding of the dynamical mechanisms that produce enantiomerically-sensitive cross sections when chiral molecules scatter longitudinally-polarized (chiral) electrons in the gas phase will be reviewed. These mechanisms can be classified roughly as (a) Mott scattering, (b) exchange effects due to the target molecule's electron helicity density, and (c) spin-other-orbit coupling. The distinct physics and chemistry of these three mechanisms can be applied to a variety of collision channels including quasi-elastic scattering and dissociative electron attachment. Our latest quasi-elastic scattering data with halocamphor targets will be presented [1], and some new theoretical developments from the São Paulo group will be discussed. The role that these mechanisms play in enantiomeric specificity in the adsorption of chiral molecules on magnetic surfaces will be considered as well [2]. [1] J.M.Dreiling *et al.*, J.Phys.B **51**, 21LT01 (2018) [2] K. Banerjee-Ghosh *et al.*, Science **360**, 1331 (2018)

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