Ionic liquids at electrified interfaces and nanoconfinement: a road towards electrotuneable friction

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Electrotuneable friction with room temperature ionic liquid lubricants is a hot subject nowadays. What are the pertinent properties of ionic liquids that determine the electrotuning of lubricity? In this talk I will present an overview of the problem, starting from our current understanding of the structure and electric properties of ionic liquids in the bulk, at electrified interfaces, and in ultra-narrow nanoconfinement. But 'electronanotribology' deals with intermediate situations of several ionic layers between the sliding surfaces, and although the mentioned knowledge is invaluable for electrochemistry, it cannot be directly used in rationalising electrotuneable friction. I will describe the first steps towards understanding the generic effects and the physics determining electrotuneable friction, preparing the platforms for the analysis of finer effects to be covered in the talks by F.Bresme and M.Urbakh.