Figure 40.1 Selected examples for IL-cations (left) and anions (right): (a) imidazolium, (b) pyrrolidinium, (c) pyridinium, (d) ammonium, (e) phosphonium and (f) guanidinium. The side chains $R_1$–$R_6$ are alkyl groups, which can also carry functionalities such as alcohols, ethers, and nitriles. Usually weakly coordinating anions are used as counterparts (g–l): ethyl sulfate, dicyanamide, bistri fluoromethanesulfonylimide ($\text{NTf}_2^-$), methyl sulfonate, $\text{BF}_4^-$, $\text{PF}_6^-$, etc.