New Acyl Hydrazones with Promising Photophysical Properties

S. Fernandez-Palacios,*[a] Y. Vida Pol[b], M. C. Ruiz Delgado[a]

a) Department of Physical Chemistry, University of Malaga, Boulevard Louis Pasteur Campus Teatinos, 29071, Spain.
b) Department of Organic Chemistry, University of Malaga, Boulevard Louis Pasteur Campus Teatinos, 29071, Spain.

* *sarafpc@uma.es*

Hydrazones have become of great interest for the scientific community due to their promising chemical properties and biological activities. In this group of compounds, the acyl or aryl hydrazones, that are Schiff bases composed by the C=N-NH-CO- group are even more interesting because they present biological activities like antimicrobial, anti-HIV, anticancer, etc. Moreover, these compounds also exhibit interesting properties as multi-stimuli responsive materials [1]. In this study the synthesis and the photophysical properties of a series of new substituted acylhydrazones is presented. In order to explore how donor or acceptor units would influence the behavior of these molecules, different substituents have been introduced in the benzoyl ring. Besides, different aromatic rings have been included in their structures (see Figure 1). Thanks to their structural characteristics, these compounds present two types of features: i) they are able to coordinate with metal cations and ii) the photo-induced configurational *E*/*Z* isomerization. All acylhydrazones have been obtained in the *E* conformation and *E*/*Z* isomerization is found to take place either photochemically or thermally. Through a joint experimental and theoretical investigation, we have been able to conclude which conformers are the most probable and why in some cases the isomerization process is completed while it is not in others. Interestingly, the structural factors (such as the presence of intramolecular hydrogen bonds) that are affecting the most both the formation of the coordination process and the *E*/*Z* conversion have been successfully identified [2].

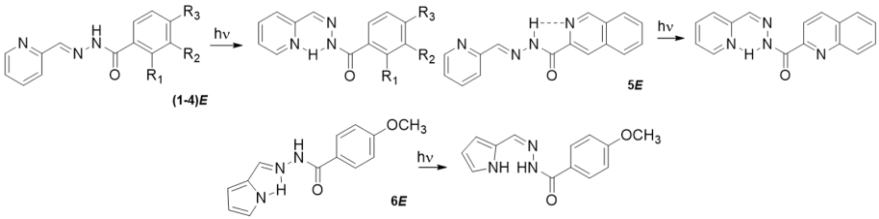

Figure 1. E/Z isomerization process for acylhydrazones under study.

References

1. E. L. Romero, R.F. D'vries, F. Zuloaga and M.N. Chaur, J. Braz. Chem. Soc., 26 (2015).
2. S. Fernandez-Palacios, J. T. López Navarrete, E. Pérez Investrosa, M. C. Ruiz Delgado, Y. Vida Pol, under preparation.