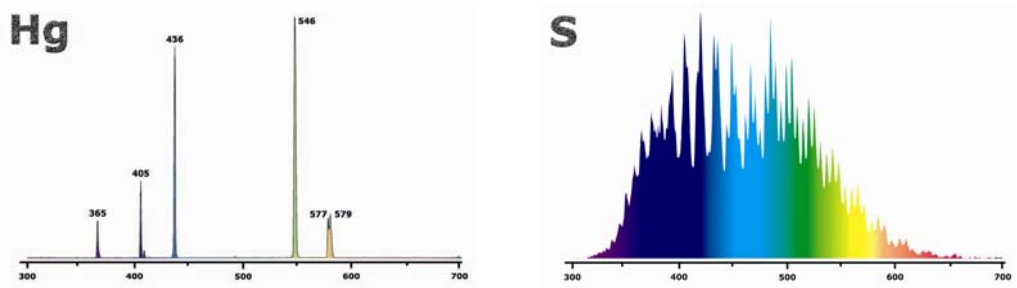
Study of the electrodeless discharge lamps for photochemical applications and temperature dependence of photostationary state in *cis-trans* photoisomerization of stilbene derivatives

Relich, S., Prague/CZE, Církva, V., Prague/CZE

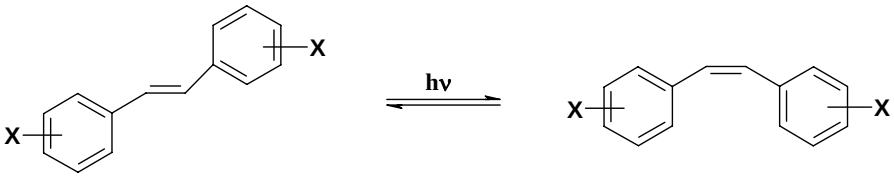
Stanislav Relich, Institute of Chemical Process Fundamentals of the Academy of Sciences of the Czech Republic, Rozvojova 135, 165 02 Prague

We disclosed the studies of the microwave photochemistry in an original photochemical reactor consisting of electrodeless discharge lamp (EDL) placed into the reactor vessel of a commercial microwave oven. The UV light in the lamp is generated by MW field resulting in direct simultaneous UV and MW irradiation of reaction mixture. [1-4]

The emission spectrum of EDL can be chosen by the kind of filling material. Some examples of dependence of EDLs spectrum on fill (Hg, Cd, S, P, I) are described. [5-6]



We irradiated some stilbene derivatives (X = OCH_3, NO_2, CH_3, F, CF_3) substituted in *para*- or *metha*- position with Hg-EDL and S-EDL in microwave oven at 64°C (bp of hexane). For comparison we are also irradiated these compounds by classical mercury lamp at several temperatures over Pyrex filter.



Literature:
[1] P.Klán, V. Církva, *Microwaves in Photochemistry*, in A. Loupy (Ed.), Microwaves in Organic synthesis 2nd Ed., Wiley/VCH, Weinheim, **2006**, p. 860-897.
[2] Home page: *http://home.icpf.cas.cz/cirkva*
[3] P. Klán, M. Hájek, V. Církva, *J. Photochem. Photobiol. A: Chem.* **2001**, *140*, 185.
[4] P. Klán, J. Literák, S. Relich, *J. Photochem. Photobiol. A: Chem.* **2001**, *143*, 49.
[5] P. Müller, P. Klán, V. Církva, *J. Photochem. Photobiol. A: Chem.* **2005**, *171*, 51.
[6] V. Církva, L. Vlková, S. Relich, M. Hájek, *J. Photochem. Photobiol. A: Chem.* **2006**, *179*, 229.