



Disazo symmetrical stilbene dyes. Synthesis and colour evaluation

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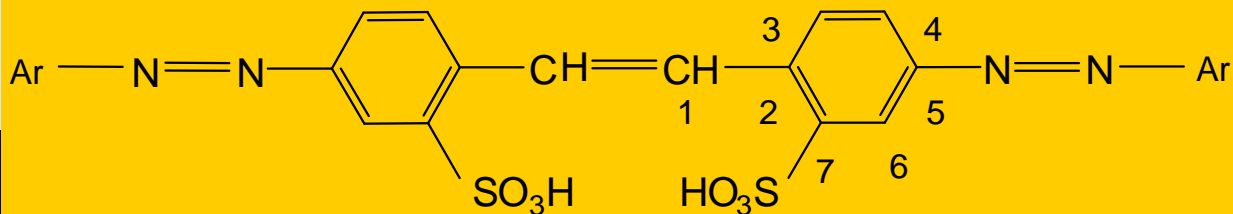
AIM

The synthesis of two new symmetrical disazo direct dyes containing 4,4'-diaminostilbene-2,2'-disulphonic acid as middle component and 3-chlorosalicylanilide and 4-chlorosalicylanilide as coupling components

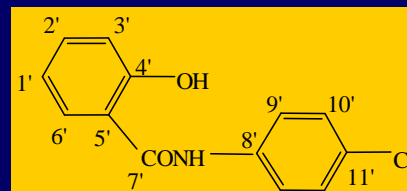
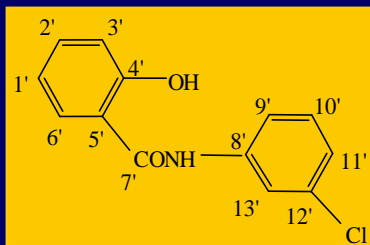
The synthesized dyes were analyzed by thin layer chromatography (TLC), VIS, FT/IR and ^{13}C -NMR spectroscopy, and HPLC technique.

The synthesized dyes were analyzed by means of the CIELAB parameters under the CIE recommended conditions: D65 /10°, A /10° , F2/10°

The colour difference (ΔE_{ab}^*) was calculated against one white standard (P.W.6; C.I.77 .891)



where the couplings components Ar for the azo-stilbene dyes are; 1 (for dye I); 2 (for dye II);



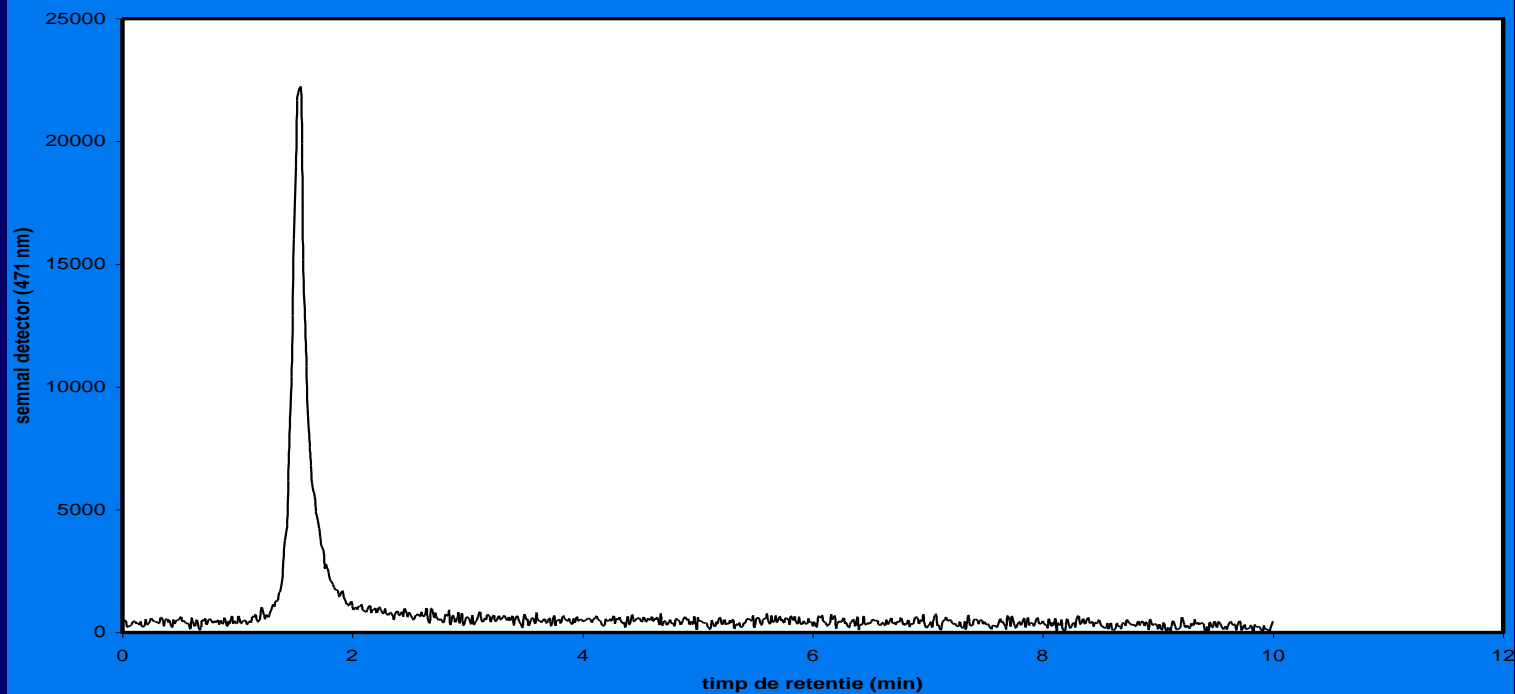
1

2

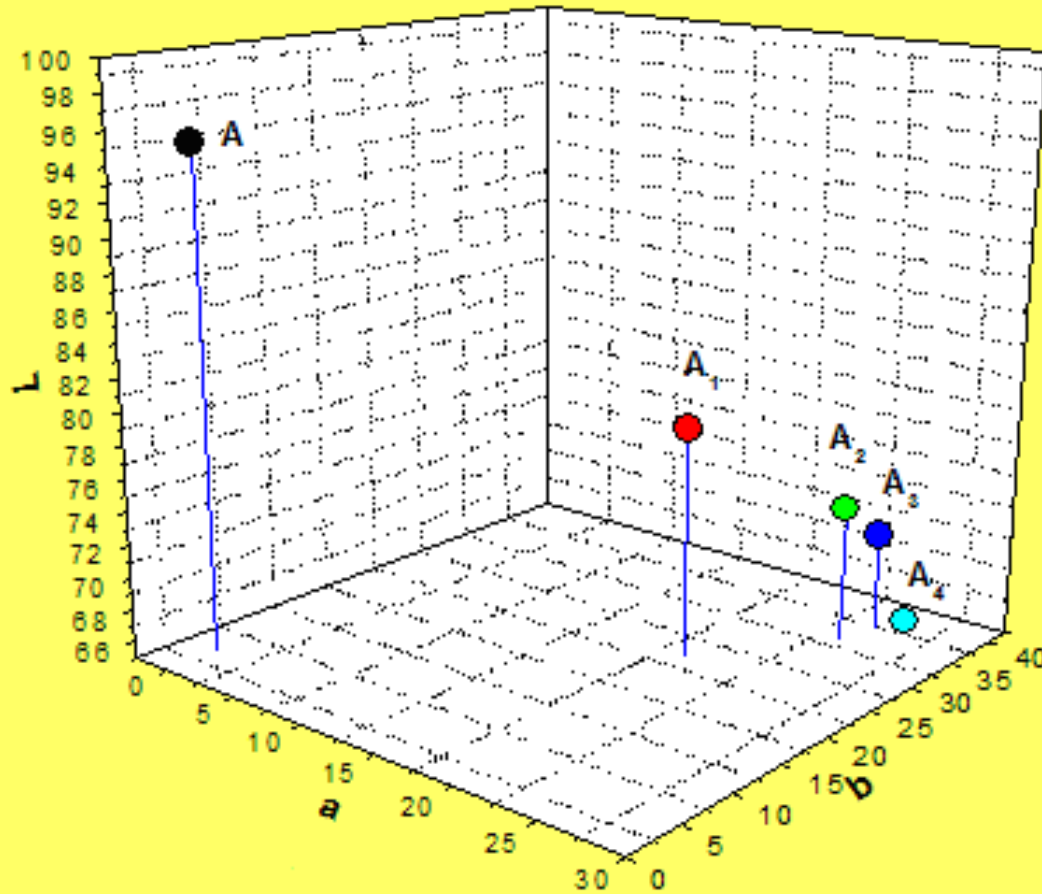
Scheme 1

Structures of the azo-stilbene dyes I and II (the atoms position for ^{13}C -NMR spectrum)

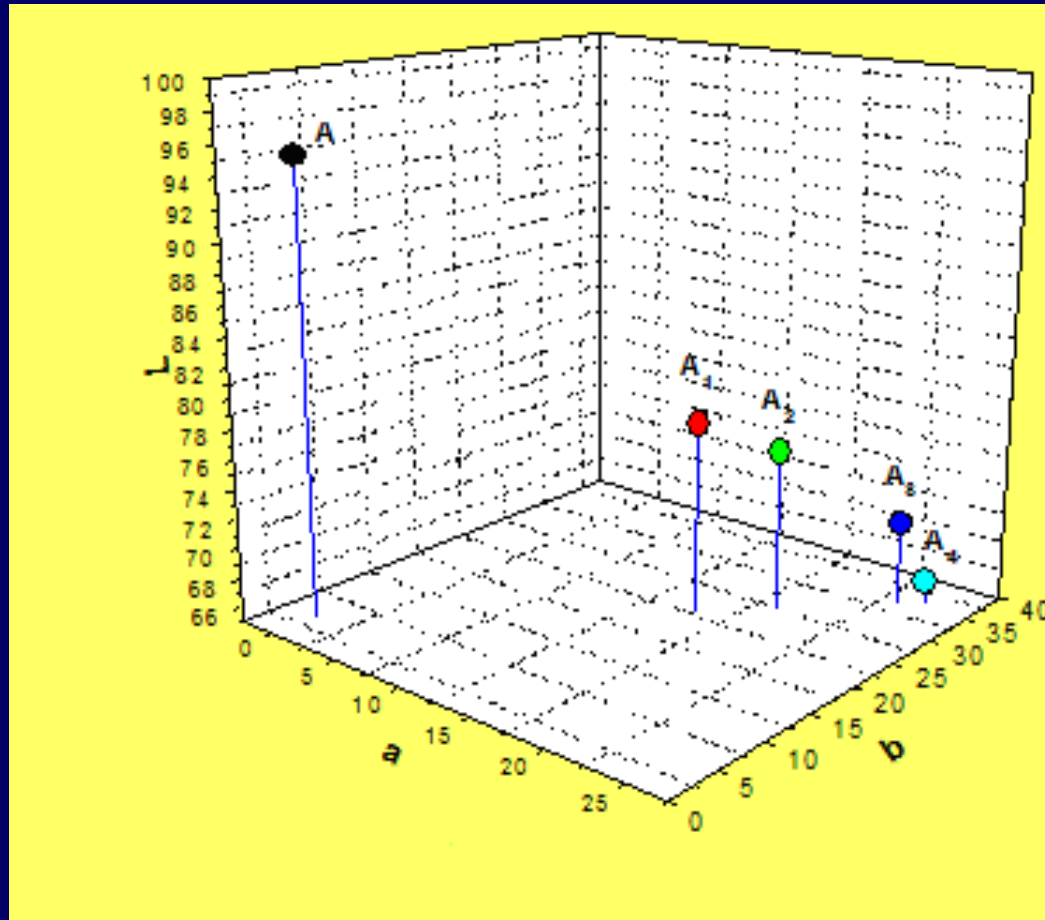
Jasco,C18,
83% aqueous MeOH
Isocratic elution



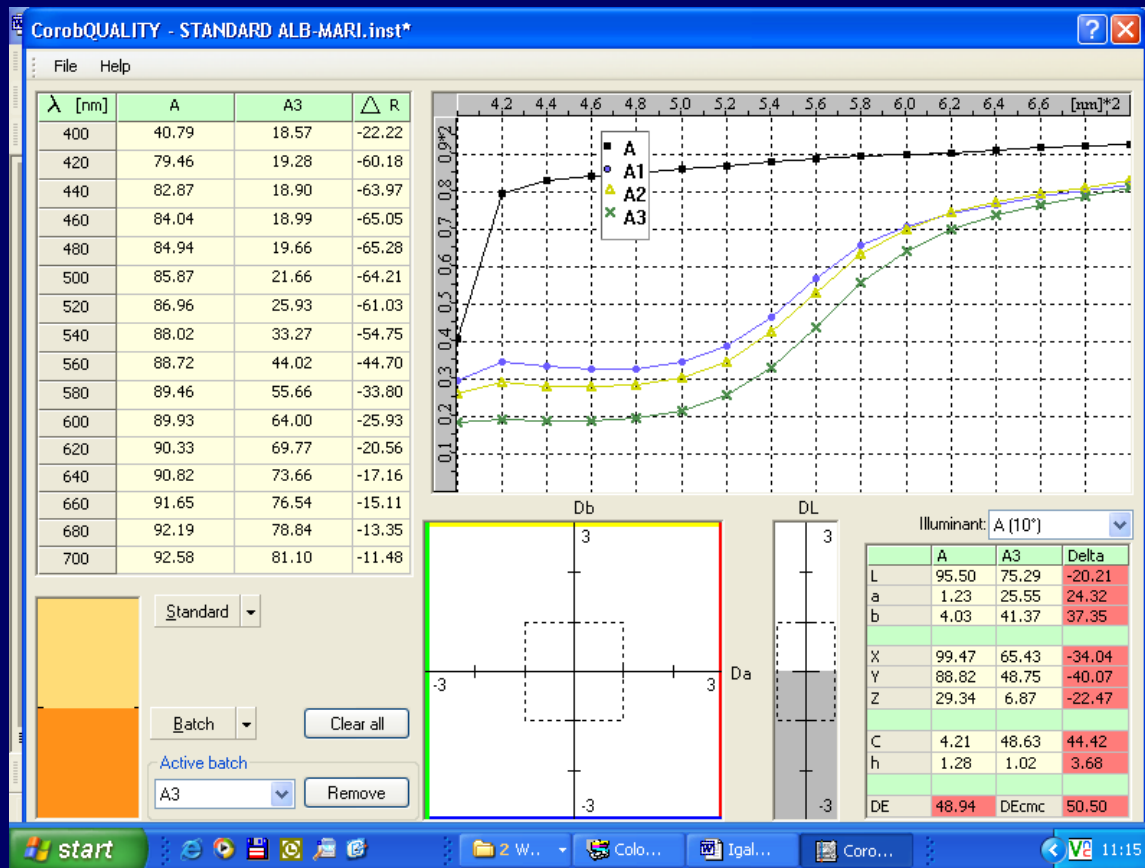
Chromatogram for dye II



Colour measurements for the dye I compared to the white standard



Colour measurements for the dye II compared tot the white standard



The reflectance curve of the azo-stilbene dye II (15% dye concentration, A illuminant, 10° observer)



CONCLUSIONS

Two new disazo symmetrical direct dyes containing 4,4'-diaminostilbene-2,2'-disulphonic acid as middle component and 3-chlorosalicylanilide and 4-chlorosalicylanilide as coupling components were synthesized and characterized.

The spectroscopy data (VIS, FT/IR, ^{13}C -NMR), the chromatographic data (TLC and HPLC) and the colour analysis data (CIELAB) confirm the proposed chemical structures for the synthesized dyes.

The colour differences (ΔE_{ab}^*) calculated against one standard reveal a good colouring power of the studied dyes
