

SYNTHESIS OF THIOPHENE-NAPHTHALENE ANALOGS OF CHALCONE

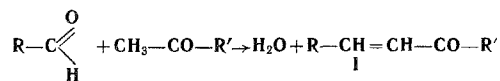
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Khimiya Geterotsiklicheskikh Soedinenii, Vol. 4, No. 2, pp. 369-370, 1968

UDC 547.732.733'651.07:542.953.2

A number of thiophene and nitrothiophene analogs of chalcone containing a naphthalene ring have been obtained by crotonic condensation.

The present paper gives information on the preparation of a number of analogs of chalcone I by the crotonic condensation of α -thiophenealdehyde, α -nitro- α' -thiophenealdehyde, α -naphthaldehyde, and β -naphthaldehyde with α -acetothienone, α -nitro- α' -acetothienone, α -acetylnaphthalene, and β -acetylnaphthalene in an alkaline [1] or acid [2] medium



The compounds I that we synthesized (see table) consist of solid, predominantly yellow substances

crystallizing well (with the exception of 1). They all possess characteristic halochromic properties, forming halochromic solutions with concentrated sulfuric acid with colorations from orange-red to violet.

REFERENCES

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6 February 1967

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No.	R	R'	T. Mp, °C	Empirical formula	S, %		Yield, %
					found	calculated	
1	α -Thienyl	α -Naphthyl	61-63*	C ₁₇ H ₁₂ OS	12.36; 12.15	12.13	83
2	α -Nitro- α' -thienyl	α -Naphthyl	156-158**	C ₁₇ H ₁₁ NO ₃ S	10.21; 10.62	10.37	43
3	α -Thienyl	β -Naphthyl	96-97**	C ₁₇ H ₁₂ OS	12.08; 12.32	12.13	67
4	α -Nitro- α' -thienyl	β -Naphthyl	198-199	C ₁₇ H ₁₁ NO ₃ S	10.43; 10.53	10.37	39
5	α -Naphthyl	α -Thienyl	115-116* (from benzene)	C ₁₇ H ₁₂ OS	12.22; 12.28	12.13	80
6	α -Naphthyl	α -Nitro- α' -thienyl	179-180**	C ₁₇ H ₁₁ NO ₃ S	10.35; 10.69	10.37	76
7	β -Naphthyl	α -Thienyl	155-156*	C ₁₇ H ₁₂ OS	12.18; 11.96	12.13	95
8	β -Naphthyl	α -Nitro- α' -thienyl	196-197 (from acetic acid)	C ₁₇ H ₁₁ NO ₃ S	10.63; 10.71	10.37	70

* Recrystallized from aqueous ethanol.

** Recrystallized from propanol.

REACTIONS EXPANDING THE AZIRIDINE RING

I. Reaction of N-Phenylethyleneimine with Carbon Dioxide and Its Sulfur Analogs

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Khimiya Geterotsiklicheskikh Soedinenii, Vol. 4, No. 2, pp. 370-372, 1968

UDC 547.717+547.77

N-Phenylethyleneimine reacts with carbon dioxide to form 3-phenyl-2-oxazolidone. Carbon disulfide and carbon oxysulfide give poly(ethylene dithiocarbamate) and poly(S-ethylene thiocarbamate) which, on thermal decomposition, form 3-phenyl thiazolidine-2-thione and 3-phenyl-1,3-thiazolid-2-one.

The reaction of oxiranes and thiiranes with carbon disulfide and its sulfur analogs takes place with the expansion of the three-membered rings [1]. The analogous reactions of aziridines have been studied little.