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(71) Applicant (for all designated States except US): SOUTH-WEST RESEARCH INSTITUTE [US/US]; 6220 Culebra Road, San Antonio, TX 78238-5166 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WELLINGHOFF, Stephen, T. [US/US]; 7718 Benbrook, San Antonio, TX 78250 (US). HANSON, Douglas, P. [US/US]; 8635 Cross Spring, San Antonio, TX 78251 (US).

(74) Agent: MORRIS, Paula, D.; Paula D. Morris & Associates, P.C., 2925 Briarpark Drive, Suite 930, Houston, TX 77042 (US).

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(54) Title: NOVEL METHODS AND BLENDS FOR CONTROLLING REHOLOGY AND TRANSITION TEMPERATURE OF LIQUID CRYSTALS

(57) **Abstract:** Novel methods and blends for controlling rheology and transition temperature of photocurable mesogens while maintaining low polymerization shrinkage and without adversely affecting mechanical strength and stability of the cured resins.

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CAS ONLINE, WEST 2.1		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where ap	
X, P	US 6,258,974 B1 (WELLINGHOFF et al) 10 July 20 and col. 15, lines 15-44 and the claims	001, col. 5, line 40 to col. 7, line 12
Α	US 5,998,499 A (KIEE et al.) 07 December 1999, absrtact and col. 2, lines 1-35	
A	US 6,031,015 A (Ritter et al.) 29 Febuary 2000, fsee line 62	e igure 3 and col. 3, line 10 to col. 4,
A	US 5,622,648 (Parri et al.) 22 April 1997, col. 3, lin	nes 13-38
Further	documents are listed in the continuation of Box C.	See patent family annex.
"A" document	pecial categories of cited documents: t defining the general state of the art which is not considered to be alar relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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-		being obvious to a person skilled in the art
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Box PCT		Shean C. Wu DEBORAH THOMAS PARALEGAL SPECIALIST Telephone No. 703-308-0661
Washington, D.C. 20231 Facsimile No. (703)305-3230		Telephone No. 703-308-0661