

Title (en)
CONTROLLING RESONANT PHOTOELASTIC MODULATORS

Title (de)
STEUERUNG RESONANTER, PHOTOELASTISCHER MODULATOREN

Title (fr)
COMMANDE DE MODULEURS PHOTOELASTIQUES RESONNANTS

Publication
EP 1064582 A1 20010103 (EN)

Application
EP 99912519 A 19990316

Priority

- US 9905586 W 19990316
- US 7806998 P 19980316

Abstract (en)
[origin: WO9947966A1] A system and method for exploiting the dependance of a photoelastic modulator's (PEM's) resonance frequency on temperature (attributable to driving amplitude and to ambient temperature) to generally improve the performance of PEMs. In one embodiment there is provided a method and system for efficiently driving a series of multiple PEMs. To this end, each of the PEMs in a stack are separately tuned, as by controlling the power dissipated in each PEM, so that the resonance frequencies of all of the PEMs converge to a common frequency. Thus, all of the PEMs are simultaneously at resonance to ensure maximum efficiency and to maintain a selected total retardation amplitude. In another embodiment of the present invention, a single-element PEM is controlled in a manner to account for the subtle changes in the PEM's resonance frequency. To this end a control method and system is provided to keep constant both the retardation amplitude of the PEM and the actual operating frequency of the PEM, which frequency need not necessarily be the resonant frequency.

IPC 1-7
G02F 1/11; **G02F 1/33**; **G02B 9/02**

IPC 8 full level
G02B 5/30 (2006.01); **G02F 1/11** (2006.01)

CPC (source: EP)
G02B 5/3083 (2013.01); **G02F 1/113** (2013.01); **G02F 1/11** (2013.01)

Citation (search report)
See references of WO 9947966A1

Designated contracting state (EPC)
DE FR GB NL

DOCDB simple family (publication)
WO 9947966 A1 19990923; AU 3088199 A 19991011; CA 2323871 A1 19990923; EP 1064582 A1 20010103

DOCDB simple family (application)
US 9905586 W 19990316; AU 3088199 A 19990316; CA 2323871 A 19990316; EP 99912519 A 19990316