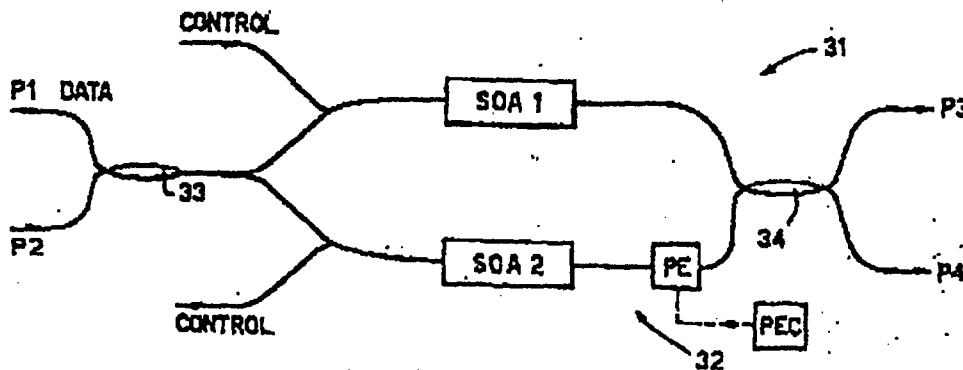




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: G02F 1/35		A1	(11) International Publication Number: WO 96/22562
			(43) International Publication Date: 25 July 1996 (25.07.96)
(21) International Application Number: PCT/GB96/00072		(31) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AZ, BY, KG, KZ, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 16 January 1996 (16.01.96)			
(30) Priority Data: 9501025.2 19 January 1995 (19.01.95) GB 95301366.1 3 March 1995 (03.03.95) EP (34) Countries for which the regional or international application was filed: GB et al.			
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(54) Title: OPTICAL SWITCH



(57) Abstract

An optical switch includes a semiconductor gain medium and inputs for an optical control signal applied to the semiconductor gain medium. The switch has a pair of arms (31, 32) arranged in a Mach-Zehnder configuration. A semiconductor gain medium (SOA1, SOA2) is connected in each arm. A fixed phase shifting element PE is also connected in one arm. Control signals are applied to each of the semiconductor gain media. There is a delay between the control signals selected so that a desired one of the optical pulses experiences a differential phase shift and so we switch to a different output of the multiplexer. In one example, the semiconductor gain media are provided by discrete semiconductor devices sandwiched between a pair of planar substrates on which waveguides forming the other components of the switch are formed. The switch may be used for demultiplexing OTDM signals.