

Title (en)
MACH-ZEHNDER SWITCH

Title (de)
MACH-ZEHNDER-SCHALTER

Title (fr)
COMMUTATEUR DE MACH-ZEHNDER

Publication
EP 0873532 A4 19991215 (EN)

Application
EP 96916609 A 19960523

Priority
• US 9607648 W 19960523
• US 48909095 A 19950609

Abstract (en)
[origin: WO9642027A1] A compact monolithic Mach-Zehnder switch is formed such that one of the waveguide paths (69, 70) between the input and output couplers (67, 68) contains a material which exhibits a resonant nonlinearity, whereby its refractive index changes when pump power propagates through it. Each of the waveguide paths (69, 70) has a different propagation constant whereby signal light is subjected to a different delay in each path when no pump power is propagating through the rare nonlinear path. An input signal applied to the input (71, 72) of the switch appears at a first output terminal (73, 74) when the pump power does not propagate through the nonlinear path, and it appears at a second output terminal (73, 74) when the pump power is applied to the nonlinear path. Switching occurs at relatively low levels of pump power.

IPC 1-7
G02B 6/26; **G02B 6/10**

IPC 8 full level
G02B 6/26 (2006.01); **G02B 6/122** (2006.01); **G02B 6/34** (2006.01); **G02F 1/313** (2006.01); **G02F 1/35** (2006.01); **G02F 1/365** (2006.01); **G02B 6/12** (2006.01); **G02B 6/28** (2006.01)

CPC (source: EP)
G02F 1/3136 (2013.01); **G02F 1/3517** (2013.01); **G02B 6/2835** (2013.01); **G02B 6/29352** (2013.01); **G02B 2006/12145** (2013.01); **G02F 1/3131** (2013.01)

Citation (search report)
• [DY] US 5295205 A 19940315 - MILLER WILLIAM J [US], et al
• [DY] US 5351325 A 19940927 - MILLER WILLIAM J [US], et al
• [Y] US 5044715 A 19910903 - KAWACHI MASAO [JP], et al
• [DY] PANTELL R H ET AL: "ANALYSIS OF NONLINEAR OPTICAL SWITCHING IN AN ERBIUM-DOPED FIBER", JOURNAL OF LIGHTWAVE TECHNOLOGY, vol. 11, no. 9, 1 September 1993 (1993-09-01), pages 1416 - 1424, XP000416247, ISSN: 0733-8724
• [A] NAKAMURA S ET AL: "HIGH-REPETITION OPERATION OF A SYMMETRIC MACH-ZEHNDER ALL-OPTICAL SWITCH", APPLIED PHYSICS LETTERS, vol. 66, no. 19, 8 May 1995 (1995-05-08), pages 2457 - 2459, XP000507760, ISSN: 0003-6951
• See references of WO 9642027A1

Designated contracting state (EPC)
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