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## Optoelectronic modulator device used in base station, has resonant tunneling diode such that change in absorption coefficient of semiconductor material of modulator device is negligible

**Patent Number(s):** WO200288834-A2 ; EP1381909-A2 ; AU2002255127-A1 ; JP2004524589-W ; US2004247218-A1 ; AU2002255127-A8 ; WO200288834-A3

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**Derwent Primary Accession Number:** 2003-058852 [37]

### Articles Cited by Examiner: 1

**Abstract:** NOVELTY - A waveguide unit (10a) includes indium-gallium-arsenide (InGaAs) resonant tunneling diode (RTD) (15a) such that the change in absorption coefficient of semiconductor material (20a) of the modulator device (5a) with applied electric field, is negligible at predetermined operating wavelength range.

USE - Optoelectronic modulator device used in base station (claimed) of communication network (claimed).

ADVANTAGE - Since the absorption coefficient of the semiconductor material is negligible, the change in refractive index is substantially zero, thereby the required optical phase and intensity modulation is achieved in the optoelectronic modulator device.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Base station;
- (2) Communication network; and
- (3) Resonant tunneling diode structure usage method.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the optoelectronic modulator device.

Modulator device (5a)

Waveguide unit (10a)

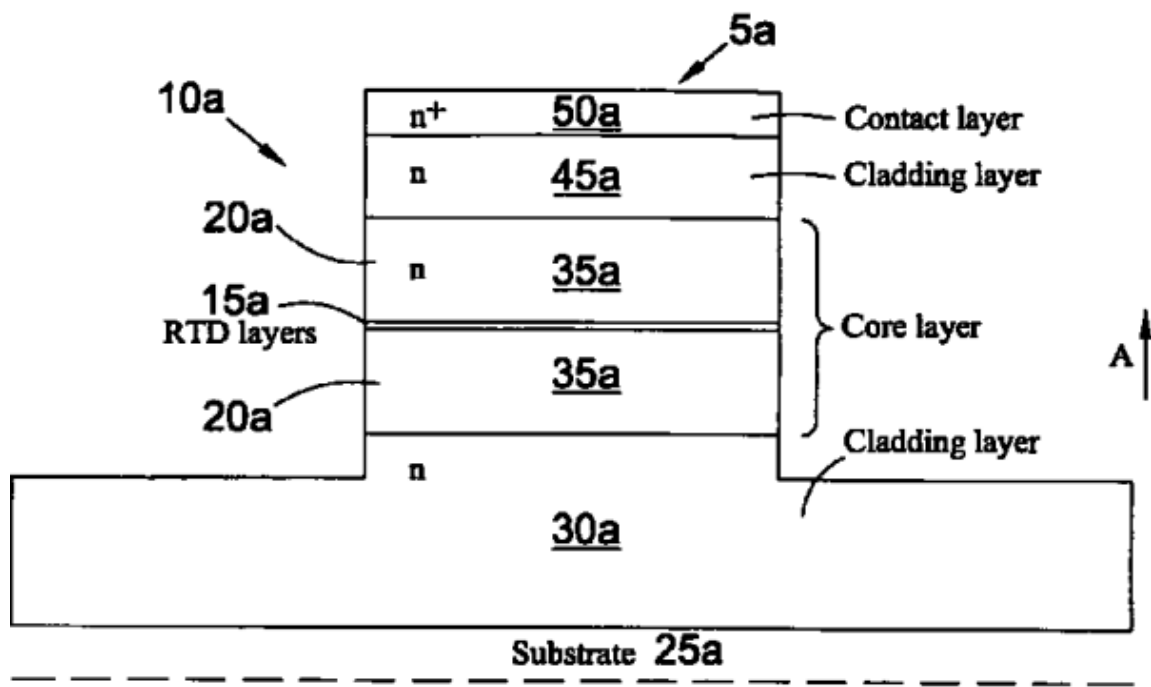
RTD (15a)

Semiconductor material (20a)

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**Drawing:**

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**International Patent Classification:** G02F-001/017; G02F-001/025; G02F-001/225; G02F-001/01

**Derwent Class Code(s):** L03 (Electro-(in)organic, chemical features of electrical devices); P81 (Optics); U12 (Discrete Devices, e.g. LEDs, photovoltaic cells); V07 (Fibre-optics and Light Control); W01 (Telephone and Data Transmission Systems)

**Derwent Manual Code(s):** L03-G02; L04-E02; L04-E05; U12-A02C3; U12-E01A1; V07-F01A5; V07-K01A; W01-B05A1A

**Patent Details:**

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WO200288834-A2	07 Nov 2002	G02F-001/025	200305	Pages: 15	English
EP1381909-A2	21 Jan 2004		200410		English
AU2002255127-A1	11 Nov 2002		200433		
JP2004524589-W	12 Aug 2004	G02F-001/025	200453	Pages: 30	
US2004247218-A1	09 Dec 2004	G02F-001/01	200481		
AU2002255127-A8	13 Oct 2005		200611		
WO200288834-A3	17 Apr 2003	G02F-001/025	201207		English

**Application Details:**

WO200288834-A2	WOGB01930	25 Apr 2002
EP1381909-A2	EP724435	25 Apr 2002
AU2002255127-A1	AU255127	25 Apr 2002
JP2004524589-W	JP586074	25 Apr 2002
US2004247218-A1	US475744	07 Apr 2004
AU2002255127-A8	AU255127	25 Apr 2002
WO200288834-A3	WOGB01930	25 Apr 2002

**Further Application Details:**

EP1381909-A2	Based on	Patent	WO200288834
EP1381909-A2	PCT application	Application	WOGB01930
AU2002255127-A1	Based on	Patent	WO200288834

