

Stevilo redov

$$m = \frac{4 \cdot a}{\lambda} \cdot NA$$

a... polmer

$$V = 2,405 = k \cdot a \cdot NA$$

$$k = \frac{2\pi}{\lambda} \quad a \dots \text{debelina}$$

Polarizirana M...Ne laserska cev


l... dolžina cevi $f = \frac{c}{\lambda}$

N... št redov

$$l_r = \frac{c \cdot N}{2 \cdot \Delta f \cdot n} = \frac{\lambda_0}{2 \cdot n} = \frac{\lambda}{2}$$

Kotno brucene vtičnice

NA_{max}, da se svetloba ne ujame



$$NA_{max} = n_{\text{jezn}} \cdot \sin \alpha$$

Fotodioda M... plazovno ojačanje

$$I = \frac{|Q_c|}{W_4} \eta P = \frac{|Q_c| \eta P}{hc} \lambda \cdot M = \text{defaktor}(1)$$

Zveza iz več kosov kablo

$$\Delta t = \Delta \lambda \cdot \sum_i D_i l_i$$

N... št redov
D... disp. ksef.
l... dolž. resonatorja
C... zmogj. zveze

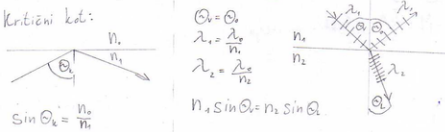
$$\Delta \lambda = \Delta f \cdot \frac{\lambda^2}{c} = \Delta f \frac{c}{f^2}$$

$$C = \frac{1}{3 \Delta t} = B \cdot \log(1 - \frac{P}{P_0})$$

Kompenzacijsko vstajo
l-D + l₂-D₂ = 0 ; G₁...
G₂ = α · l + α₂ · l₂ ; d [1/d₁ + 1/d₂]
P₀ = 2 · W · (n₁ - n₂) · d · f · Δf

$$\Delta f = \frac{N \cdot c}{2 \cdot l_r \cdot n}$$

Pojavi na meji dveh dielektrikov



$$E = \sqrt{\frac{2 \cdot Z_0 \cdot S}{n}} \cdot P = S \cdot A ; Z = 377 \Omega$$

uporabna

$$E_L = E_V (1 + |\Gamma_{TE}|)$$

$$\Gamma_{TE} = \frac{E_{0V}}{E_V} ; |\Gamma|^2 = \frac{P_{0V}}{P_V} ; \Gamma_{TE} = \frac{n_2 - n_1}{n_1 + n_2}$$

slabjenje $d = 10 \cdot \log |\Gamma|^2$

$$|\Gamma_{TM}| = \frac{(\frac{n_2}{n_1})^2 \cos \theta_i - \sqrt{(\frac{n_2}{n_1})^2 - \sin^2 \theta_i}}{(\frac{n_2}{n_1})^2 \cos \theta_i + \sqrt{(\frac{n_2}{n_1})^2 - \sin^2 \theta_i}}$$

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Numerična apertura (NA)

$$NA = \sqrt{n_1^2 - n_2^2}$$

$$NA = n_1 \cdot \sqrt{2 \Delta}$$

$$\Delta = \frac{n_1 - n_2}{n_1} \rightarrow \text{relativna razlika lomnih količnikov}$$

Prostorski kot



$$\Omega [\text{srd}] = 2\pi (1 - \cos \theta_{max})$$

$$\Omega [\text{srd}] = \pi \cdot NA^2$$

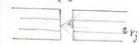
$$\eta = \frac{\Omega}{4\pi}$$

n... nemišljen izvor

$$NA = \sin \theta_{max}$$

$$n \cdot \sin \alpha = n_1 \cdot \sin \beta$$

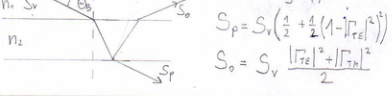
Sklop



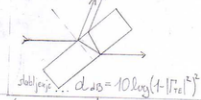
slabjenje $d = 10 \cdot \log(1 - 2|\Gamma|^2)$

$$\eta = \frac{\eta_1 \eta_2}{(\eta_1 + d \cdot NA)^2} \quad NA = \eta_1 d$$

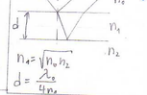
Brewsterjev kot ($\Gamma_{TM} = 0$)



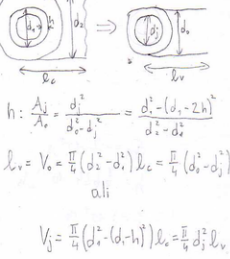
Brewsterjevo okno



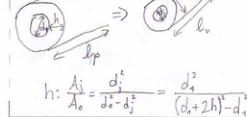
AR sloj



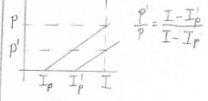
MCVD



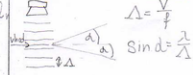
OCVD



Temperaturna odvisnost laserja



Raman-Nathova celica (zvoč)



Mach-Zehnderje LiNbO3

