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Apêndice

Apêndice 1

Nas tabelas 1 e 2 têm-se um resumo de todos os dispositivos processados.

Tabela 1 – Resumo dos dispositivos processados.

Amostra	B1 (nm)	QW (nm)	B2 (nm)	PQ - dopagem	B3 (nm)	Estrutura
987	99	10	1,5	Não	16	X10; 138,6s B1 (InGaAlAs); 2,1s B2 (InGaAlAs); 120s B3 (InP); 14,2 s QW; 5,5s PQ
989	109	Não	Não	Não	13	X10 ; 152,6s B1 (InGaAlAs); 100s B3 (InP); 5,5s PQ
990	99	10	Não	Não	13	X10; 138,6s B1 (InGaAlAs); 100s B3 (InP); 14,2 s QW; 5,5s PQ
992	99	10	3,0	Não	13	X10; 138,6s B1 (InGaAlAs); 4,2s B2 (InGaAlAs); 100s B3 (InP); 14,2 s QW; 5,5s PQ
993	0	10	Não	Não	16	X3; 14,4 B1 (InP); 120s B1 (InP); 14,2 s QW; 5,5s PQ
996	109	Não	Não	Não	13	X10; 152,6s B1 (InGaAlAs); 100s B3 (InP); 5,5s PQ
997	99	10	3,0	Sim	13	X10; 138,6s B1 (InGaAlAs); 4,2s B2 (InGaAlAs); 100s B3 (InP); 14,2 s QW; 5,5s PQ
1013	109	Não	Não	Não	16	X10; 152,6s B1 (InGaAlAs); 120s B3 (InP); 5,5s PQ baseado na amostra 996
1024	99	10	3,0	Não	19	X10; 138,6s B1 (InGaAlAs); 4,2s B2 (InGaAlAs); 140s B3 (InP); 14,2 s QW; 5,5s PQ, baseado na amostra 992
1026	99	10	Não	Não	16	X10; 138,6s B1 (InGaAlAs); 120s B3 (InP); 14,2 s QW; 5,5s PQ, baseado na amostra 990
1027	99	10	3,0	Não	16	X10; 138,6s B1 (InGaAlAs); 4,2s B2 (InGaAlAs); 120s B3 (InP); 14,2 s QW; 5,5s PQ, baseado na amostra 1024
1031	99	10	3,0	Sim	16	X10; 138,6s B1 (InGaAlAs);4,2s B2 (InGaAlAs); 120s B3 (InP); 14,2 s QW; 5,5s PQ, baseado na amostra 997

Tabela 2 – Resumo dos dispositivos processados.

Amostra	B1 (nm)	QW (nm)	B2 (nm)	PQ - dopagem	B3 (nm)	Observação
1062	109	Não	Não	Não	16	Igual a 1013 (x 20, para absorção, sem camadas de contacto)
1063	109	Não	Não	[Si]=12.4 sccm	16	Igual a 1062 com PQ dopado(x 20, para absorção, sem camadas de contacto)
1064	109	Não	Não	[Si]=25,4 sccm	16	Igual a 1062 com PQ dopado QD (x 20, para absorção, sem camadas de contacto)
1065	109	Não	Não	Não	16	Igual a 1062 (x 10, para fotocorrente, com camadas de contacto)
1066	109	Não	Não	[Si]=12.4 sccm	16	Igual a 1065 com PQ dopado (x 10, para fotocorrente, com camadas de contacto)
1067	109	Não	Não	[Si]=25,4 sccm	16	Igual a 1062 com PQ dopado (x 10, para fotocorrente, com camadas de contacto)
1068	99	10	3,0	Não	16	Igual a 1024 (x 10, para fotocorrente, com camadas de contacto)
1069	99	10	3,0	[Si]=12.4 sccm	16	Igual a 1068 com PQ dopado (x 10, para fotocorrente, com camadas de contacto)
1070	99	10	3,0	[Si]=25,4 sccm	16	Igual a 1069 com PQ dopado (x 10 para fotocorrente, com camadas de contacto)
1071	99	10	3,0	Não	16	Igual a 1068 (x 20, para absorção, sem camadas de contacto)
1072	99	10	3,0	[Si]=12.4 sccm	16	Igual a 1071 com PQ dopado (x 20, para absorção, sem camadas de contacto)
1073	99	10	3,0	[Si]=25,4 sccm	16	Igual a 1072 com PQ dopado (x 20, para absorção, sem camadas de contacto)

Apêndice 2

Resumo das estruturas crescidas.

---------- sample 989 (A2) ----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 60nm

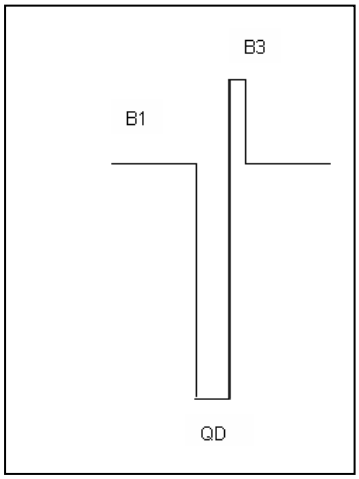
InP 13nm |

InAs QD | (x10)

InGaAlAs,Al=16 % 109nm |

GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 6 wn 941695-017



---------- sample 996 (A2) ----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 60nm

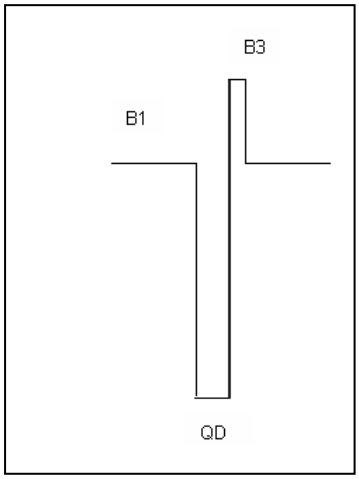
InP 13nm |

InAs QD | (x10)

InGaAlAs,Al=16 % 109nm |

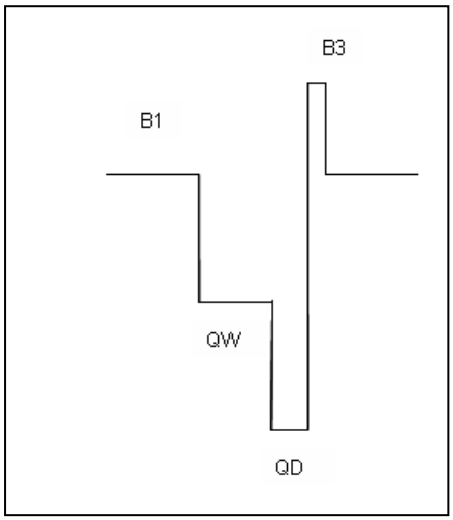
GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 8 wn 941695-017



Observação: As amostras 989 e 996 são iguais . Repetimos a amostra apenas para termos mais material.

Ambas não têm b_2 e QW.



---------- sample 990 (A1) ----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 99nm

InP 13nm |

InAs QD | (x10)

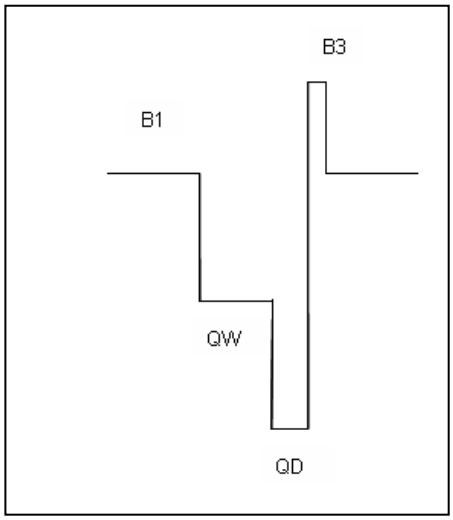
InGaAs 10nm |

InGaAlAs,Al=16 % 99nm |

GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 7 wn 941695-017

Observação: Amostra com 10 períodos



---------- sample 993 (A1) ----------
#

GaInAs:n 500nm

InP 16nm |

InAs QD | (x3)

InGaAs 10nm |

InP 8nm

GaInAs:n 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 7 wn 941695-017

Observação: Amostra com 3 períodos

---------- sample 992 (A5)----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 60nm

InP 13nm |

InAs QD | (x10)

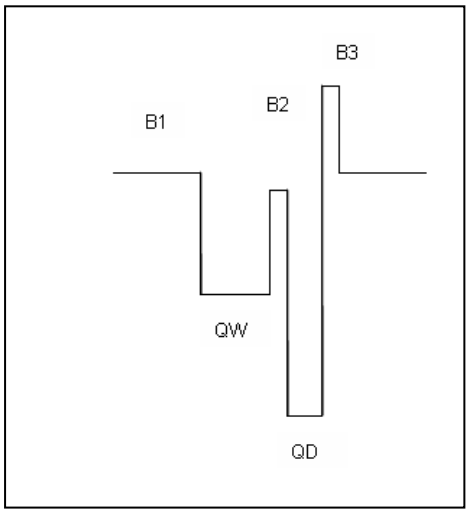
InGaAlAs,Al=18,5% 3.0nm |

InGaAs 10nm |

InGaAlAs,Al=16 % 99nm |

GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 7 wn 941695-017
#



Observação: Dobramos b_2

----------sample 987 (A5) ----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 60nm

InP 13nm |

InAs QD | (x10)

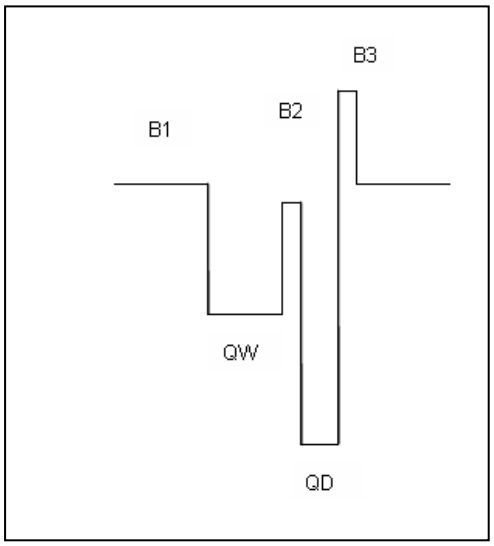
InGaAlAs,Al=18,5% 1.5nm |

InGaAs 10nm |

InGaAlAs,Al=16 % 99nm |

GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 7 wn 941695-017



---------- sample 997 (A5) ----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 99nm

InP 13nm |

InAs:n QD | (x10)

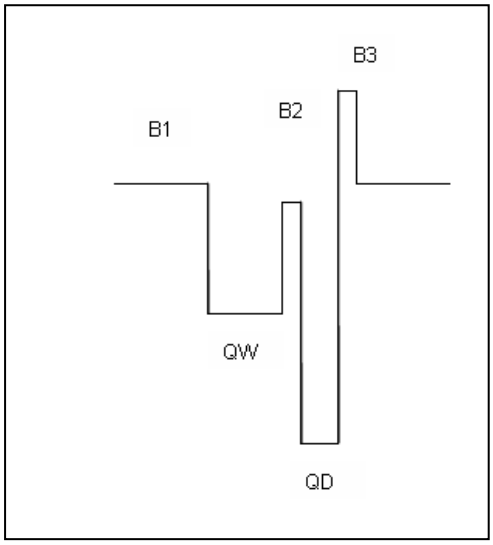
InGaAlAs,Al=18,5% 3nm |

InGaAs 10nm |

InGaAlAs,Al=16 % 99nm |

GaInAs 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100) 8 wn 941695-017



Observação: Dot dopado

---------- sample 1065 (1066, 1067)----------
#

GaInAs:n 250nm

InGaAlAs,Al=16 % 109nm

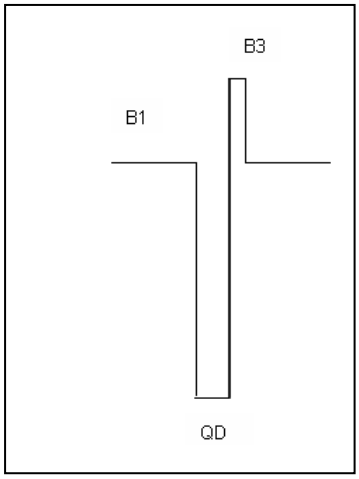
InP 16nm |

InAs QD | (x10)

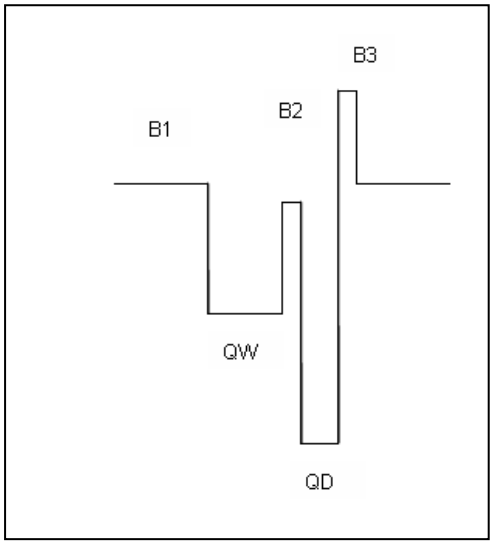
InGaAlAs,Al=16 % 109nm |

GaInAs:n 500nm

InP 150nm
----
substrate:
Sumitomo-InP: Fe (100)



---------- sample 1068 (1069, 1070) ----------




```
#
# -------------------------
# GaInAs:n                  250nm
# -------------------------
# InGaAlAs,Al=16 %          99nm
# -------------------------
# InP                       16nm    |
# -------------------------
# InAs                      QD      | (x10)
# -------------------------
# InGaAlAs,Al=18,5%         3nm     |
# -------------------------
# InGaAs                    10nm    |
# -------------------------
# InGaAlAs,Al=16 %          99nm    |
# -------------------------
# GaInAs                    500nm
# -------------------------
# InP                       150nm
# -------------------------
# substrate:
# Sumitomo-InP: Fe (100)
```

8
Anexos

8.1 Artigos completos publicados em periódicos

P. L. Souza ; Lopes, A. ; Gebhard, T. ; Unterrainer, K. ; Pires, M. P. ; Villas-Boas, J. M. ; Vieira, G. S. ; Guimaraes, P. S. ; Studart, N. . Quantum dot structures grown on Al containing quaternary material for infrared photodetection beyond 10 micron. Applied Physics Letters, v. 90, p. 173510, 2007.

Fonseca Filho, H. D. ; Prioli, R. ; Pires, M. P. ; Lopes, A. ; P. L. Souza ; Ponce, F. Atomic force nanolithography of InP for site control growth of InAs nanostructures. Applied Physics Letters, v. 90, p. 20-23, 2007.

Fonseca Filho, Henrique Duarte da ; Prioi, R. ; Pires M. P.; Lopes A. ; Souza P. L. ; Ponce, F. A. . Atomic force nanolithography of InP for site control growth of InAs nanostructures. Virtual Journal of Nanoscale Science and Technology, v. 90, p. 013117, 2007.

Fonseca Filho, Henrique Duarte ; Prioli, R. ; Pires, Mauricio Pamplona ; Lopes, Arthur S ; Souza, Patricia Lustosa de ; Ponce, Fernando A . Growth of InAs nanostructures on InP using atomic-force nanolithography. Applied Physics. A, Materials Science & Processing, v. 89, p. 945-949, 2007.

Mendoza-Alvarez, J. ; Pires, M. P. ; Landi, S. ; Lopes, A. J. ; Souza, P. L. ; Villas Boas, J. M. ; Studart, N. . Influence of stoichiometry on the luminescent properties of InAs quantum dots grown on a InxGa1-xAs/InP heterostructure. Physica E. Low-Dimensional Systems and Nanostructures, Holanda, v. 32, p. 85-88, 2006.

8.2 Artigos submetidos

Applied Surface Science

H.D.Fonseca.Filho ; R.Prioli ; M.P.Pires ; A.S.Lopes ; P.L.Souza, InAs nanostructure growth on AFM nanolithographed InP, Applied Surface Science

8.3 Trabalhos completos publicados em anais de congressos

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