

Indium Phosphide and Related Materials Conference.
Proceedings of 8th International Conference on Indium Phosphide and
Related Materials
21-25 April 1996, Schwabisch-Gmund, Germany

**Raman scattering analysis of InGaAs/InP:
effect of rare earth (dysprosium) addition
during liquid phase epitaxial growth**

I. M. Tiginyanu, V. V. Ursaki, B. Podor, L. Csontos, V. P. Shontya

<https://doi.org/10.1109/SMICND.2013.6688114>

Abstract

The authors present the results of Raman scattering investigation of the effect of the variation of the Dy doping level on the properties of InGaAs layers on InP, with the aim to elucidate the mechanisms of the effects of rare earth elements in LPE of III-Vs. An important outcome of this study is that Raman scattering provides a non-destructive, simple and accurate way to characterize the InGaAs layers..

References

1. N. T. Bagracy, L. S. Vlasenko, K. A. Gatsoev, A. T. Gorelenok, A. V. Kamanin, V. V. Mamutin, et al., Fiz. Tekh. Poluprovodn, vol. 18, pp. 83, 1984.
2. Sov. Phys. Semicond, vol. 18, pp. 49, 1984.
3. A. T. Gorelenok, V. G. Gruzdev, R. Kumar, V. V. Marnutin, T. A. Polyanskaya, I. G. Savel'ev, et al., Fiz. Tekh. Poluprovodn., vol. 22, pp. 35, 1988.
4. Sov. Phys. Semicond., vol. 22, pp. 28, 1988.
5. A. Kumar and D. N. Bose, Materials Sci. Eng., vol. B 12, pp. 389, 1992.
6. B. Pődör, L. Csontos, K. Somogyi and D. Vignaud, Acta Physica Polonica, vol. A 87, pp. 465, 1995.
7. D. Vignaud, X. Wallart and F. Moilot, J. Appl. Phys., vol. 76, pp. 2324, 1995.
8. I. C. Bassignana, C. J. Miner and N. Puetz, J. Appl. Phys., vol. 65, pp. 4299, 1989.
9. Y. Takeda, "9" in GaInAsP Alloy Semiconductors, New York:J. Wiley, 1982.
10. Properties of Lattice Matched and Strained InGaAs, London:INSPEC, 1993.
11. G. Lucovsky and M. F. Chen, Solid State Comm., vol. 8, pp. 1397, 1970.
12. J. P. Estrera, P. D. Stevens, R. Glosser, W. M. Duncan, Y. C. Kao, H. Y. Liu, et al., Appl. Phys. Lett., vol. 61, pp. 1927, 1992.

Indium Phosphide and Related Materials Conference.
Proceedings of 8th International Conference on Indium Phosphide and
Related Materials
21-25 April 1996, Schwabisch-Gmund, Germany

13. T. P. Pearsall, R. Carles and J. C. Portal, Appl. Phys. Lett., vol. 42, pp. 436, 1983.
14. K. Kakimoto and T. Katoda, Appl. Phys. Lett., vol. 40, pp. 826, 1982.
15. S. Emura, T. Nakagawa, S. I. Gonda and S. Shimizu, J. Appl. Phys., vol. 62, pp. 4632, 1987.
16. G. C. Jiang, Y. D. Juang, J. J. Chyi, S. Lu and L. B. Chang, Cryst. Res. Technol., vol. 30, pp. 275, 1955.