

Processing aspects of CdZnTe fragments and 2" wafers for epitaxial growing CdHgTe by molecular beam epitaxy

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Received June 09, 2022

The studies carried out in this work are aimed at fine-tuning processes the lapping and polishing technology in the serial production of CdZnTe wafers for molecular beam epitaxy.

Keywords: cadmium zinc telluride, lapping and polishing, surface roughness, molecular beam epitaxy.

DOI: 10.51368/2307-4469-2022-10-3-289-300

REFERENCES

1. A. Rogalski, *Infrared Detectors*. (CRC Press, USA, 2019).
2. I. D. Burlakov, K. O. Boltar, S. A. Kuznetsov, and V. P. Ponomarenko, in *Proc. Materialy XXVI Mezhdunarodnoj nauchno-tehnicheskoy konferencii po fotoelektronike i priboram nochnogo videniya* (Moscow, NPO Orion, 2022), p. 18.
3. K. O. Boltar, I. D. Burlakov, D. S. Terent'ev, P. V. Vlasov, and M. V. Sednev, in *Proc. Materialy XXVI Mezhdunarodnoj nauchno-tehnicheskoy konferencii po fotoelektronike i priboram nochnogo videniya* (Moscow, NPO Orion, 2022), p. 31.
4. P. Gindin, V. Karpov, N. Kuznetsov, V. Petrenko, V. Semenov, and V. Chishko, *Photonics*, No. 6, 62 (2013).
5. Yu. G. Sidorov, S. A. Dvoretzky, V. S. Varavin et al., *Physics and technology of semiconductors* **35** (9), 1092 (2001).
6. Yu. B. Andrusov, A. G. Belov, A. A. Konovalov, and N. A. Smirnova, *Cvetnye metally*, No. 12, 56 (2016).
7. N. A. Kulchitsky, A. V. Naumov, and V. V. Startsev, *Elektronika: Nauka. Tekhnologiya. Biznes*, No. 6, 114 (2020).
8. A. S. Senchenkov, *Usp. Prikl. Fiz.* **9** (5), 402 (2021).
9. N. A. Kulchitsky and A. A. Mel'nikov, *Nano- i mikrosistemnaya tekhnika*, No. 6, 9 (2011).
10. M. D. Pavlyuk, Diss. kand. fiz.-mat. nauk, FGU «Federal'nyj nauchno-issledovatel'skij centr «Kristallografiya i fotonika» Rossijskoj akademii nauk», 2020, 153 s.
11. M. B. Grischechkin, I. A. Denisov, N. A. Smirnova, N. I. Shmatov, and A. A. Silina, *Applied Physics*, No. 5, 510 (2014) [in Russian].
12. M. B. Grischechkin, I. A. Denisov, A. A. Silina, N. I. Shmatov, *Non-Ferrous Metals*, No. 2, 23 (2016).
13. M. B. Grischechkin, I. A. Denisov, A. A. Silina, and N. I. Shmatov, *Cvetnye metally*, No. 12 (2016).
14. E. V. Pryanikova, A. E. Miroshnichenko, N. A. Smirnova, A. A. Silina, I. D. Burlakov, M. B. Grischechkin, I. A. Denisov, and N. I. Shmatov, *Applied Physics*, No. 2, 82 (2016) [in Russian].
15. S. V. Babu, *Advanced in chemical mechanical planarization (CMP)*. (Woodhead Publishing, 2016).