Description
The system consists of several specialized vacuum chambers: chambers for input and output of plate-substrates with cassette loading (two cassettes consisting of ten plates 102 mm in diameter); chamber for epitaxial growth of elementary semiconductors (Si,Ge), metal and dielectric layers with electron-beam evaporators and plasma sources; chamber for growing A3B5, A3N, and A2B6 semiconductor compounds (with six or eight molecular beams); analytical chamber with an Auger spectrometer and automatic laser ellipsometer. The chambers can be combined in an arbitrary order.

The elements that can be supplied together with the system or separately are crucibles made of pyrolitical boron nitrides of different sizes; electron-beam and electron-cyclotron resonance sources; electron diffractometer (accelerating voltage up to 30 kV); electron-beam evaporators; “Foton-micro” system for registration of diffraction patterns and analysis of their intensity; laser ellipsometer for measurement of optical parameters and thickness of thin-film structures in the course of their growth.

Technical appraisal and economic benefits
• Novelty and uniqueness of technological solutions;
• Top-level performance and low cost price;
• Convenience for laboratory and industrial usage.

Application areas
Production of materials for the element base of micro- and optoelectronics (laser systems, TV communications, satellite TV, etc.).

Development stage
Experimental small-scale production at the Institute of Semiconductor Physics of the Siberian Branch of the Russian Academy of Sciences.

Patent situation
Author’s certificates, patents, know-how.

Commercial offers
Joint production, know-how sales

Estimated cost
The cost of the single-chamber system is 250,000 – 400,000 US$;
Crucibles - 500 – 800 US$;
Diffractometer – 15,000 –25,000 US$;
Ellipsometer – 40,000 US$;
Attachment device – 60,000-100,000 US$.

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