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Analysis of technologies of excellence as an intellectual basis for the new technological setup is discussed. The main evolutionary trends of materials science basis as a platform of the technologies of excellence development are described within the aspect of "Micro- and nanotechnics".
Keywords: micro- and nanotechnics, technologies of excellence, technological setup, convergent systems, bionic technologies

Goloudina S. I., Luchinin V. V., Pasyuta V. M., Krishtab M. B., Panov M. F., Rozanov V. V., Sklizkova V. P., Kudryavtsev V. V., Baklanov M. R. *Structural Features and Prospective Applications of Langmuir—Blodgett Films of a Rigid-Chain Polyimide* 9
Langmuir—Blodgett multilayer films of rigid-rod polyimide based on polyamic acid (PAA BPDA-oTD) alkylamonium salt has been studied by reflection ellipsometry, atomic force microscopy, small-angle X-ray scattering and X-ray reflectivity. It was shown that nanosized polyimide films can be effectively used for precise reducing the internal stress of the bilayer membrane "silicon nitride-polyimide". Modification of SiO_2 electret by the polyimide films (2—5 nm) leads to high charges stability. High pore sealing capability of polyimide films has been also demonstrated.
Keywords: polyimide, Langmuir—Blodgett, membrane, pore sealing

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Keywords: nanolayers of aluminum oxide, porous anodic aluminum oxide, atomic-molecular chemical assembly, electrochemical anodization, biosensor, lab on a chip

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Keywords: thin film, aluminum nitride, texture, magnetron sputtering, mechanical stress, piezoelectric films

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Keywords: magnetic nanoparticles, capillary chip, quasielastic light scattering in capillary, microturbidimetry, magnetophoresis in capillary

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Keywords: analogue method, microsystem, converter, equivalent circuit, gyrators, membrane element

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Keywords: micromembraneelement, mathematical model, sensitivity, resonance frequency, optoelectronic measurement system, fiber-optic interferometer

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Keywords: navigation, MEMS, accelerometer, gyroscope

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Keywords: MEMS switch, phase shifters, phased arrays, diamond-like materials

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Keywords: integration, microassembling, ASIC, flexible electronic