## Smagulova Svetlana Afanasyevna

**Education:**

1968-1973, Novosibirsk State University, Department of Physics

1983, Candidate of Sciences (Ph.D.) in Semiconductor Physics. Thesis "Interaction between disordered regions and point defects in silicon"

**Work Experience:**

1973-1985 – engineer, post-graduate student, junior researcher in Institute of Semiconductor Physics, Novosibirsk

1985-1993 – senior researcher in the Department of Solid State Physics at the Kazakh State University

1994-present – Chief Scientist, Head of “Graphene nanotechnology” Laboratory in Institute of Physics and Technologies of North-Eastern Federal University, Yakutsk

**Scientific activities:**

Study of radiation defects in silicon; ion implantation. Charge-deep level transient spectroscopy (DLTS) in semiconductors. Optical properties of the natural diamond. Research of recharging processes in structures based on silicon with quantum dots and quantum wells.

Fabrication and study of new material based on graphene: graphene and graphene oxide dispersions, films, papers, layered structures, graphene structures with quantum dots, composite materials (polymers, rubbers with the addition of graphene oxide). Electronic device development technologies based on graphene: humidity sensors based on graphene and graphene oxide, ionistors, strain gauge transducers. Graphene applications m medicine.

**Educational activities:**

Since 1996 Smagulova S.A. is engaging in educational activities: lectured on various subjects, she supervises student's scientific works and diploma theses. In recent years, she teaches a course "Physical electronics" for 3rd year students in Institute of Physics and Technologies of North-Eastern Federal University.

**Main recent publication**

Number of publications: 93


1. I.V. Antonova, P.V. Vinokurov, S.A. Smagulova, M.S. Kagan, S.K. Ray, J. Kolodzey Resonant tunneling in Si/SiGe/Si structures with a single quantum well under surface passivation, J. Appl. Phys, 110,123710 (2011).
2. I.V. Antonova, V.I. Popov, S.A. Smagulova, J. Jedrzejewski, I.Balberg Charge deep-level transient spectroscopy of SiO2 and Al2O3 layers with embedded Ge nanocrystals J. Appl. Phys. 113, 084308, 2013
3. G. N. Alexandrov, S. A. Smagulova, A. N. Kapitonov, D. F. Vasilieva, I. I. Kurkina, P. V. Vinokurov, V. B. Timofeev, I. V. Antonova, Thin partially reduced oxide graphene films: structural, optical and electrical properties, Nanotechnologies in Russia, vol. 9. No. 5-6. S. 18-22, 2014.
4. N.A. Nebogatikova, I.V. Antonova, V.Ya. Prinz, V.B. Timofeev, S.A. Smagulova, Graphene quantum dots in fluorographene matrix, Carbon, 77, p. 1095-1103, 2014.
5. I.V. Antonova, N.A. Nebogatikova, V.Ya. Prinz, V.I. Popov, S.A. Smagulova, Light-assisted recharging of grapheme quantum dots in fluorographene matrix, J. Appl. Phys. 116, 134310, 2014.
6. I Kurkina and S Smagulova. Transverse optical phonon dispersion for multi-layer graphene // IOP Journal of Physics: Conference Series. 2014.
7. T. E. Timofeeva , S. A. Smagulova, V. I. Popov. The application of wavelet transform to the problem of detecting and determining the positions of lorenzino 2D band Raman spectrum of double layer graphene. FTP, 2015, volume 49, issue 6 –c. 834-838
8. N.A. Nebogatikova, I.V. Antonova, V.Ya. Prinz, I.I. Kurkina, V.I. Vdovin, G.N. Aleksandrov, V.B. Timofeev, S. A. Smagulova, E.R. Zakirov, V.G. Kesler. Fluorinated grapheme dielectric films obtained from functionalized grapheme suspension:preparation and properties. Phys. Chem. Chem.Phys., 2015, **17,** 13257-13266.
9. I.I. Kurkina, I.V. Antonova, N.A. Nebogatikova, A.N. Kapitonov, S.A. Smagulova. Resistive switching effect and traps in partially fluorinated graphene films. J.Phys. D:Appl. Phys. **49** 095303 (9pp), 2016.
10. A.N. Kapitonov, G.N. Alexandrov, F.D. Vasileva, S.A. Smagulova, V.B. Timofeev, N.R. Maksimova, A.A. Kuznetsov. Characterization of grapheme oxide suspension for fluorescence quenching in DNA-diagnostics. Korean J. Mater. Res. Vol.26, No. 1, 2016.