

Website update – ESR-ER presentation template

Marie-Curie Fellow

Name: Beshkova

First Name: Milena

Age: 33

Nationality: Bulgarian

Position (ER/ESR): ER

Host institution: Linköping University, Department of Physics, Chemistry and Biology, IFM

Contract duration: 22 months



Short Education Background (10 lines max.)

EDUCATION: Sofia University "St.Kliment Ohridski" - chemistry department
1993-1998 M.Sc. Inorganic and analytic chemistry

TOPIC OF DIPLOMA DISSERTATION: *"Influence of vacuum Rapid Thermal Annealing of the properties of micro Pressure Chemical Deposition (μ PCVD) SiO_2 and $\text{SiO}_2\cdot\text{P}_2\text{O}_5$ films"*

2001 - 2004 Ph.D-student. TOPIC OF Ph.D THESIS: *"Synthesis and characterization of hetero- epitaxial layers in the AlN-SiC systems"*, the experimental part of Ph.D study was carried out within Marie Curie Fellowship (2001-2002), Material Science Div., Linköping University, SWEDEN

2006 Dr. in the scientific speciality Inorganic Chemistry

Research focus and main activities carried out in the scope of the project (10 lines max.)

-Investigation of 3C-SiC growth on 6H-SiC(0001) on axis at source temperature 2000°C, growth pressure 10^{-5} mbar and temperature gradient in the range of 5-8 °C/mm.

-Investigation of 3C-SiC growth at source temperature 2000°C, growth pressure 10^{-5} mbar, temperature gradient 7°C/mm on different type of substrates: Type I and II were on axis 6H-SiC (0001) with and without additional polishing, respectively. Type III was on axis 6H-SiC with a seed layer of 3C-SiC grown by vapor-liquid-solid (VLS) mechanism while Type IV was prepared with a seed layer grown sequentially by VLS and chemical vapor deposition (CVD).

-Morphology characterization by Optical microscope in transmission mode and Atom Force Microscopy (AFM). Structural assessment by high resolution X-ray diffraction (HR-XRD).

Publications (please specify when the publication has been issued in the scope of the MANSiC project)

1. D.Dimitrov, M.Beshkova, R.Dafinova, "Influence of vacuum Rapid Thermal Annealing of the properties of micro PCVD SiO₂ and SiO₂.P₂O₅ films", *Vacuum* **58** (2000) 485-489
2. M.Beshkova, G.Mladenov, "LiNbO₃-possibility and perspective", Proc.of conference "Electronics-2000" p.125-129 5-6 Oct.2000 Botevgrad-Bulgaria
3. M.Beshkova, M.Marinov, D.Dimitrov, G.Beshkov, G.Mladenov, T.Tanaka, K.Kawabata, "Rapid Thermal Annealing of Co_xN", *Materials and Manufacturing Processes*, **16(4)**, (2001) 531-540
4. M.Beshkova, Z.Zakhariev, J.Birch, A.Kakanakova and R.Yakimova, "Properties of AlN layers grown by sublimation epitaxy" *Materials Science Forum Vols.* **433-436** (2003) pp.995-998
5. M.Beshkova, Z.Zakhariev, J.Birch, A.Kakanakova, R.Yakimova "Sublimation epitaxy of AlN layers on 4H-SiC depending on the type of crucible" *Journal of Materials Science: Materials in Electronics* **14** (2003) 767-768
6. M.Beshkova, Z.Zakhariev, M.V. Abrashev, J.Birch, A.Kakanakova, R.Yakimova "Low-pressure sublimation epitaxy of AlN films-growth and characterization" *Vacuum* **76** (2004) 143-146
7. M.Beshkova, Z.Zakhariev, M.V. Abrashev, J.Birch and R.Yakimova "Epitaxial layers of AlN as material for microelectronics" *Electrotechnics and electronics* **5-6** (2005) 22-25
8. M.Beshkova, Z.Zakhariev, M.V. Abrashev, J.Birch and R.Yakimova "Properties of AlN layers grown by sublimation epitaxy in different gas ambient" *Materials Science & Engineering B*, **129(1-3)** (2006) 228-231
9. M. Beshkova, Z.Zakhariev, G. Spasov and R.Yakimova "Method for deposition of AlN layers" request for patent 109133 /25.04.2005
10. G. Djanovski, M.Beshkova, S.Velinova, D.Mollov, P.Vlaev, D.Kovacheva, K.Vutova, G.Mladenov "Deposition of CeO₂ Films on Si(100) Substrate by Electron Beam Evaporation", *Plasma Process. Polym.* **3** (2006), 197-200.
11. M.Beshkova, G. Djanovski, P.Petkov, P. Vlaev, D.Kovacheva, G.Mladenov "Deposition of MgO Films on Si(100) Substrate by Electron Beam Evaporation", Proc. of NANO HARD (2006) 67-70.
12. M. Beshkova, K.G.Grigorov, Z. Zakhariev, M. Abrashev, M. Massi And R. Yakimova "Sublimation Epitaxy of AlN layers grown by different conditions on 4H-SiC substrates", *Journal of Optoelectronics and Advance Materials*, **9** (2007) (1) 213-216.
13. M Beshkova, B Blagoev, D Kovacheva, G Mladenov, T Nurgaliev "Deposition and characterization of high temperature superconductor YBa₂Cu₃O_{7-δ} films obtained by DC magnetron sputtering and modification by thermal annealing", *Journal of Physics* **113** (2008) 012021
14. M. Beshkova, M. Syväjärvi, R. Vasiliauskas, J. Birch, and R. Yakimova, "Structural Properties of 3C-SiC Grown by Sublimation Epitaxy", *Materials Science Forum Vols.* **615-617** (2009) pp.181-184, **MANSiC project**
15. R. Vasiliauskas, M. Syväjärvi, M. Beshkova and R. Yakimova "Two- dimensional nucleation of cubic and 6H silicon carbide", *Materials Science Forum Vols.* **615-617** (2009) pp.189-192, **MANSiC project**