Owing to a number of unique properties, the SL has good prospects of being widely applicable to microelectronics and computer engineering. Being important in applications, the SL perfection has been investigated by various methods of X-ray and electron microscopy analysis. One of the possible defects in artificial SL is the stacking fault. In the present paper the dynamic theory of X-ray diffraction on the one-dimensional SL with a stacking fault between layers is developed.
A formula for the dependence of reflectivity on the phase of the stacking fault and its depth is obtained. For comparison with ideal superlattice, the relative modification of reflectivity is calculated. It is shown, that presence of stacking fault reduces intensity of satellites. Thus, the closer defect to the surface of the SL, the less its action on the diffraction pattern.
As is known, the interference absorption factor of a multilayered crystalline system has oscillating character. In the present paper it is shown, that presence of stacking fault reduces the interference absorption factor, maintaining its oscillations. The formula for the relative modification of the interference absorption factor is obtained.

MS 37 P06

Synchrotron station "Langmuir" at Kurchatov Center of Synchrotron Radiation and Nanotechnology E.Yu. Tereschenko, V.V. Lider, V.A. Shishkov, Yu.N. Shilin, S.I. Zheludeva, M.V. Kovalchuk *Shubnikov Institute of crystallography Russian Academy of Science, Moscow, Russia*.
E-mail: helen_t@ns.crys.ras.ru

Keywords: Langmuir monolayer, X-ray fluorescence, synchrotron X-ray instrumentation

Project of SR station "Langmuir" – the first Russian SR facility which is dedicated to study interfaces (liquid/air, liquid/liquid, liquid/solid and solid/solid); inorganic, organic and bioorganic nanolayers on water surface as well as on solid substrate; lipid-protein systems on liquid subphase, ets.
Structural configuration of station includes: *double-crystal monochromator with slits* which prepare fixed position X-ray beam over energy range 2 – 38 keV; *double-element setup* for beam deflection at grazing incidence; *sample unit* – Langmuir trough or multicircle goniometer for solid samples; *detector unit* – X-ray detectors (scintillation counter or linear position-sensitive) and fluorescent SSD.
Double-element setup was specially designed for X-ray beam deflection on the fixed Langmuir trough: first element deflects the beam from horizontal plane, the second one – directs the beam on liquid surface. Application of different couples of reflecting elements: two total reflection mirrors; multilayer structure – gradient multilayer structure; total reflection mirror – gradient multilayer structure, allows to change working range from 0 up to $Q_z^{max} \sim 0.12 \div 0.35$ Å^{-1}.
Optical scheme of the station makes it possible to realize different X-ray surface-sensitive techniques such as: total reflection X-ray fluorescence analysis; X-ray standing wave at total reflection conditions; high resolution X-ray reflectivity; grazing-incidence diffraction.
The station is planed to be in operation at the end of 2007.

The work is supported by Russian Foundation of Basic Research grant №05-02-17391, Russian Science Support Foundation.

MS37 P07

Structure and dielectric properties of $Ba_{1-x}Sr_xTiO_3$ ceramics A. Aoujgal[a,b], A. Bouifoulen[a], A. Tachafine[b], J. C. Carru[b], H. Ahamdane[c] and A. Outzourhit[a], [a]*Laboratoire de Physique du solide et des couches minces (LPSCM), Faculté des sciences Semlalia, Université Cadi Ayyad, BP 2390.Marrakech, Morocco.* [b]*Laboratoire d'Etude des Matériaux et des Composants pour l'électronique (LEMCEL), Université du Littoral - Cote d'Opale, BP 689, 62-228 Calais, FRANCE.* [c]*Laboratoire des Sciences des Matériaux (LSM), Faculté des sciences Semlalia, Université Cadi Ayyad. BP 2390 Marrakech, Morocco.* E-mail : aaoujgal@ucam.ac.ma

Keywords: Ferroelectric, perovskite, X ray diffraction.

Ceramics of barium strontium titanate are widely used in the electronics industry, in particular because of their high constant dielectric and its remarkable ferroelectric properties. Different compositions of this ceramic (x=0.8, 0.4, 0.35 and 0.2) with perovskite structure were synthesized by the conventional solid state reaction. Stoichiometric amounts of BaCO3, SrCO3 and TiO2 of high purity where thoroughly mixed using. The mixture is calcined at 1225 °C for 5 h. The calcined powders were ground and pelletized at a pressure of 2 tons. The pellets were subsequently sintered at 1400 °C for 1 h.The obtained pellets were characterized by X ray diffraction and scanning electron microscopy. The dielectric properties of the various samples were analyzed. Measurements of the capacity and conductance as a function of temperature were taken in the temperature range 10K to 300 K at various frequencies (1KHz, 10KH and 20KHz). Measurements were taken in a helium gas closed cycle cryostat which was recently installed in our laboratory (a).
The x-ray diffraction measurements revealed that the formation of the pervoskite phase for all the compositions studied with no detectable secondary phases. The lattices parameter and the transition temperature evolved with the composition x of strontium. The results of the structural, microstructure and dielectric studies will be presented and discussed.

MS37 P08

Structure studies of a titanium oxide nanoporous matrix A. Bouifoulen[a], M. Elyaagoubi[a], A. Aoujgal[a], D. Abouelaoualim[a], M. Khadiri[b], A. Oueriagli[a] and A. Outzourhit[a] [a] *State Physics and thin films Laboratory, Physics department, Faculty of Sciences Semlalia, Marrakech, Cadi Ayyad University, POB 2390, Marrakech Morocco.* [b] *Centre of blood transfusion, Ministry of health, Marrakech Morocco.*
E-mail: ablabofoln@gmail.com

Keywords: nanoporous, titanium oxide, XRD.

Nanoporous titanium oxide matrices were obtained by anodization of highly purity of titanium (99.97%) sheets in a mixture of HF, H_2SO4 and H_3PO_4 acid baths. The voltage was maintained by an ELC Al 781 N power supply. The titanium sheet was the anode and a sheet of platinum was the cathode. The anodization voltage was