Supplementary Information

Volume plasmon blueshift in dimensionally thin silicon films embedded within Be/Si periodic multilayer mirrors


a Institute for Physics of Microstructures, RAS, Afonino, Nizhny Novgorod 603087, Russia.
b Laboratory of Functional Nanomaterials, Lobachevsky State University, Nizhny Novgorod 603950, Russia.
c Institute of Semiconductor Physics, SB RAS, Novosibirsk 630090, Russia.
d Synchrotron radiation facility SKIF, Boreskov Institute of Catalysis, SB RAS, Kol’tsovo 630559, Russia

Email: kumar@ipmras.ru (NK)
Phone: (831) 417 94 73; Fax: (831) 417 94 64
Fig. SI-1. Shift of plasmon energy for modified surface of Si films in Be/Si periodic multilayer Be$_{6.09}$/Si$_{1.34}$ with the consideration of shift of satellite Si 2s photoelectron energy: (a) as-deposited (b) degreased, and Ar$^+$ ion sputtering of energy 800eV for duration of (c) 300 s and (d) 420 s.

Fig. SI-2. Angle dependent plasmon energy shift of Si films embedded in Be$_{4.24}$/Si$_{2.81}$ periodic multilayers with the consideration of energy shift of Si 2s photoelectrons; (a) 0 degrees – normal photoelectron emission (b) 10 (c) 20 (d) 30 (e) 40 (f) 50 (g) 60 and (h) 70 degrees; intensity is normalized.