

## More to read in physica status solidi (RRL)

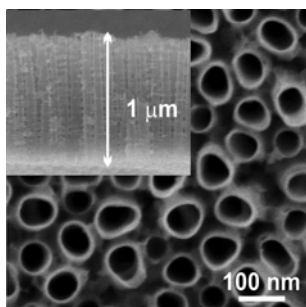
Milos Krbal, Jiri Kucharik, Hanna Sopha, Hynek Nemeč, and Jan M. Macak



### Charge transport in anodic TiO<sub>2</sub> nanotubes studied by terahertz spectroscopy [Rapid Research Letter]

Phys. Status Solidi RRL **10**(9), 691–695 (2016), DOI 10.1002/pssr.201600179

Self-organized anodic TiO<sub>2</sub> nanotube layers with thickness of 1 μm were investigated by photocurrent measurements and time-resolved terahertz spectroscopy. Electron transport through the nanotube layers was explored for the amorphous and anatase state of the nanotubes. Significant differences among both structures in terms of recombination and kinetics were revealed.



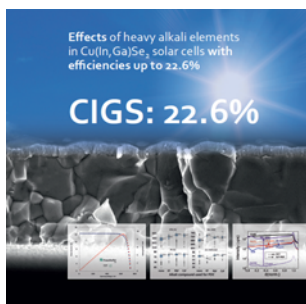
Philip Jackson, Roland Wuerz, Dimitrios Hariskos, Erwin Lotter, Wolfram Witte, and Michael Powalla



### Effects of heavy alkali elements in Cu(In,Ga)Se<sub>2</sub> solar cells with efficiencies up to 22.6% [Rapid Research Letter]

Phys. Status Solidi RRL **10**(8), 583–586 (2016), DOI 10.1002/pssr.201600199

A new world record efficiency for thin film solar cells of 22.6% has been achieved with a rubidium fluoride post-deposition treatment. The authors compare treatments using lighter and heavier alkali elements as applied to the Cu(In,Ga)Se<sub>2</sub> absorber. An interesting competitive behaviour of the various alkali elements in this functional layer of the solar cell is described.



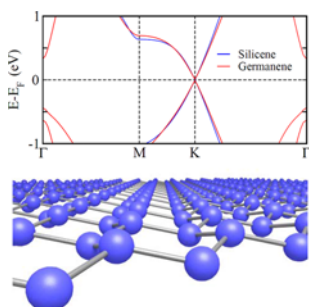
T. P. Kaloni, G. Schreckenbach, M. S. Freund, and U. Schwingenschlög



### Current developments in silicene and germanene [Review@RRL]

Phys. Status Solidi RRL **10**(2), 133–142 (2016), DOI 10.1002/pssr.201510338

In the last two years, substantial progress has been achieved towards applications of silicene and germanene. The authors address significant theoretical and experimental developments and insights in the physics and chemistry of the two materials. Important questions concern the effects of the substrate on the growth and material properties as well as the control of the band gap by decoration approaches.



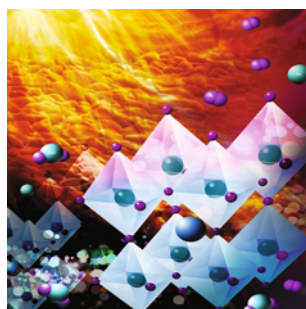
A. B. Djurišić, Fangzhou Liu, Alan M. C. Ng, Qi Dong, Man Kwong Wong, Annie Ng, and Charles Surya

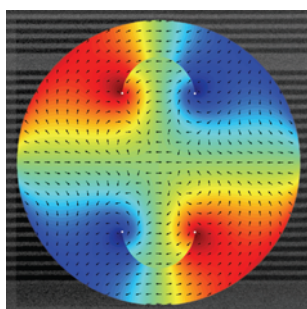


### Stability issues of the next generation solar cells [Review@RRL]

Phys. Status Solidi RRL **10**(4), 281–299 (2016), DOI 10.1002/pssr.201600012

Emerging photovoltaics technologies include perovskite solar cells, dye sensitized solar cells, and polymer solar cells. They differ in terms of record efficiencies, stage of development and maturity of technologies, and comprehensiveness of stability studies. The stability of these three types of solar cells is reviewed.



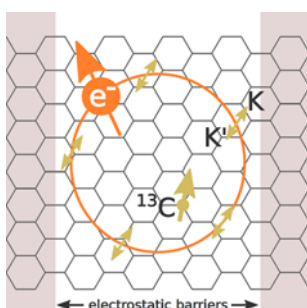


Marius Grundmann, Chris Sturm, Christian Kranert, Steffen Richter, Rüdiger Schmidt-Grund, Christianne Deparis, and Jesús Zúñiga-Pérez

### Optically anisotropic media: New approaches to the dielectric function, singular axes, microcavity modes and Raman scattering intensities [Review@RRL]

Phys. Status Solidi RRL **11**(1), 1600295 (2017), DOI 10.1002/pssr.201600295

The anisotropic optics (novel theory of Raman scattering off the principal axes) and the singular optics (spectral dispersion of Windungsachsen from generalized ellipsometry) in monoclinic gallia are reviewed. The latter represent exceptional points, a property of complex symmetric matrices, and are predicted to also exist in anisotropic microcavities leading to circularly polarized eigenstates.

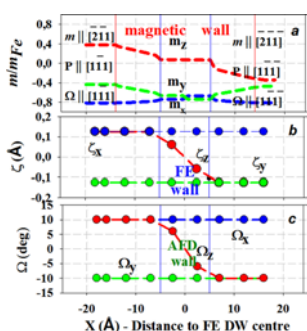


Matthias Droth and Guido Burkard

### Spintronics with graphene quantum dots [Review@RRL]

Phys. Status Solidi RRL **10**(1), 75–90 (2016), DOI 10.1002/pssr.201510182

Spintronics and graphene are fascinating and rather young areas of research with a high cadence of new discoveries. In this review, the authors motivate spintronics with graphene quantum dots and summarize recent achievements in this field. Moreover, they introduce a generic power law for the spin relaxation time as a function of the magnetic field and outline upcoming milestones.

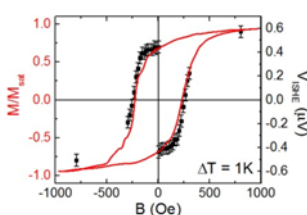


Z. V. Gareeva, O. Diéguez, J. Iñiguez, and A. K. Zvezdin

### Interplay between elasticity, ferroelectricity and magnetism at the domain walls of bismuth ferrite [Review@RRL]

Phys. Status Solidi RRL **10**(3), 209–217 (2016), DOI 10.1002/pssr.201510273

Interlacing of magnetic, electric and structural properties leads to a series of novel fascinating effects in multiferroics. In this review, the authors discuss the origin of magnetic properties of ferroelectric domain walls considering experiments and models allowing to explain spin arrangement and additional magnetization in the vicinity of domain walls in high temperature multiferroic BiFeO<sub>3</sub>.



Andrew J. Caruana, Michael D. Cropper, Jake Zipfel, Zhaoxia Zhou, Geoff D. West, and Kelly Morrison

### Demonstration of polycrystalline thin film coatings on glass for spin Seebeck energy harvesting [Rapid Research Letter]

Phys. Status Solidi RRL **10**(8), 613–617 (2016), DOI 10.1002/pssr.201600128

Thermoelectric conversion of heat via the spin Seebeck effect is demonstrated in iron oxide films deposited on glass. In particular, the power generation is shown to be comparable to epitaxially grown films indicating the potential for widespread application of such materials in future spin Seebeck based energy harvesters.

