

# Publications NTNU NanoLab 2010



**NTNU – Trondheim**  
Norwegian University of  
Science and Technology

## Publications related to nanoscience and nanotechnology at NTNU in 2010

This publication list collects journal articles published by the academic community within nanoscience and nanotechnology at NTNU. NTNU NanoLab offers this summary as part of its mandate to coordinate and monitor the development in this field of science at the university. The authors come from four faculties and represent a multi-

disciplinary research community. The publication list consists of three sections covering the main research areas: "Nanoelectronics, Nanophotonics and Nanomagnetism", "Nanomaterials" and "Bionanotechnology / Nanomedicine". It represents a comprehensive overview of the broad activities in the field at NTNU.

### Nanomaterials

- Anawati, X; Graver, B. K. F.; Nordmark, H.; Zhao, Z.; Frankel, G.S.; Walmsley, J. C.; Nisancioglu, K. *Multilayer Corrosion of Aluminum Activated by Lead*. Journal of the Electrochemical Society, 2010, 157, C313.
- Andersen, S. J.; Marioara, C. D.; Vissers, R.; Torsæter, M.; Bjørge, R.; Ehlers, F.; Holmestad, R. *The dual nature of precipitates in Al-Mg-Si alloys*. Materials Science Forum, 2010, 638, 390.
- Bartonicikova, E.; Wiik, K.; Maca, K.; Lein, H. L.; Rudberg, E. A. *Synthesis and oxygen transport properties of  $La_{0.2}Sr_{0.8}Fe_{1-x}Ti_xO_{3-d}$  ( $x=0.2, 0.4$ ) intended for syn-gas production*. Journal of the European Ceramic Society, 2010, 30, 605.
- Bjørge, R.; Marioara, C. D.; Andersen, S. J.; Holmestad, R. *Germanium network connecting precipitates in an Mg-rich Al-Mg-Ge alloy*. Journal of Electron Microscopy, 2010, 59, S129.
- Bjørge, R.; Marioara, C. D.; Andersen, S. J.; Holmestad, R. *Precipitation in Two Al-Mg-Ge Alloys*. Metallurgical and Materials Transactions. A, 2010, 41A, 1907.
- Chen, Y.; Li, Y.; Walmsley, J. C.; Dumoulin, S.; Roven, H. J. *Deformation structures of pure titanium during shear deformation*. Metallurgical and Materials Transactions. A, 2010, 41A, 787.
- Cochard, J.; Yonenaga, I.; Gouttebroze, S.; M'Hamdi, M.; Zhang, Z. *Constitutive modeling of intrinsic silicon monocrystals in easy glide*. Journal of Applied Physics, 2010, 108, 103524.
- Cochard, J.; Yonenaga, I.; Gouttebroze, S.; M'Hamdi, M.; Zhang, Z. *Constitutive modeling of intrinsic and oxygen-contaminated silicon monocrystals in easy glide*. Journal of Applied Physics, 2010, 108, 103524.
- Cui, J.; Gibson, U. *A Simple Two-Step Electrodeposition of  $Cu_2O/ZnO$  Nanopillar Solar Cells*. The Journal of Physical Chemistry C, 2010, 114, 6408.
- Denys, R. V.; Poletaev, A. A.; Solberg, J. K.; Tarasov, B. P.; Yartys, V.  *$LaMg_{11}$  with a giant unit cell synthesized by hydrogen metallurgy: Crystal structure and hydrogenation behaviour*. Acta Materialia, 2010, 58, 2510.
- Espallargas, N.; Mischler, S. *Tribocorrosion behaviour of overlay welded Ni-Cr 625 alloy in sulphuric and nitric acids: Electrochemical and chemical effects*. Tribology International, 2010, 43, 1209.
- Garskaite, E.; Lindgren, M.; Einarsrud, M.-A.; Grande, T. *Luminescent properties of rare earth (Er, Yb) doped yttrium aluminium garnet thin films and bulk samples synthesised by an aqueous sol-gel technique*. Journal of the European Ceramic Society, 2010, 30, 1707.
- Gawel, B.; Gawel, K.; Øye, G. *Sol-Gel Synthesis of Non-Silica Monolithic Materials*. Materials, 2010, 2815.
- Graver, B. K. F.; van Helvoort, A.; Nisancioglu, K. *Effect of heat treatment on anodic activation of aluminium by trace element indium*. Corrosion Science, 2010, 52, 3774.
- Guleryuz, H.; Kaus, I.; Filiatre, C.; Grande, T.; Einarsrud, M.-A. *Deposition of silica thin films formed by sol-gel method*. Journal of Sol-Gel Science and Technology, 2010, 54, 249.
- Hammer, N.; Zscherpe, T.; Chen, D.; Rønning, M. *Selective oxidation of CO on the Au-TiO<sub>2</sub> catalysts on structured carbon support*. American Chemical Society Symposium Series (ACS), 2010, 55, 102.
- He, J.; Zhang, Z.; Kristiansen, H. *Size dependent behaviour of micron-sized composite polymer particles*. Trita-MEK, 2010, 81.
- He, L.; Berntsen, H.; Chen, D. *Approaching Sustainable H-2 Production: Sorption Enhanced Steam Reforming of Ethanol*. Journal of Physical Chemistry A, 2010, 114, 3834.
- He, L.; Chen, D. *Single-Stage Production of Highly Concentrated Hydrogen from Biomass-Derived Syngas*. Chem. Sus. Chem., 2010, 3, 1169.
- He, L.; Parra, J. M. S.; Blekkan, E. A.; Chen, D. *Towards efficient hydrogen production from glycerol by sorption enhanced steam reforming*. Energy & Environmental Science, 2010, 3, 1046.
- Holme, B.; Ljønes, N.; Bakken, A.; Lunder, O.; Lein, J. E.; Vines, L.; Hauge, T.; Bauger, Ø.; Nisancioglu, K. *Preferential Grain Etching of AlMgSi(Zn) Model Alloys*. Journal of the Electrochemical Society, 2010, 157, C424.
- Huang, F.; Vanhaecke, E. M. M.; Chen, D. *In situ polymerization and characterizations of polyaniline on MWCNT powders and aligned MWCNT films*. Catalysis Today, 2010, 150, 71.
- Inzoli, I.; Kjelstrup, S.; Bedeaux, D.; Simon, J.-M. *Thermodynamic properties of a liquid-vapor interface in a two-component system*. Chemical Engineering Science, 2010, 65, 4105.

- Kjelstrup, S.; Coppens, M.-O.; Pharoah, J. G.; Pfeifer, P. *Nature-Inspired Energy- and Material-Efficient Design of a Polymer Electrolyte Membrane Fuel Cell*. Energy & Fuels, 2010, 24, 5097.
- Kvande, I.; Zhu, J.; Zhao, T.; Hammer, N.; Rønning, M.; Raaen, S.; Walmsley, J. C.; Chen, D. *Importance of Oxygen-Free Edge and Defect Sites for the Immobilization of Colloidal Pt Oxide Particles with Implications for the Preparation of CNF-Supported Catalysts*. The Journal of Physical Chemistry C, 2010, 114, 1752.
- Larsen, M. H.; Walmsley, J. C.; Lunder, O.; Nisancioglu, K. *Effect of Excess Silicon and Small Copper Content on Intergranular Corrosion of 6000-Series Aluminum Alloys*. Journal of the Electrochemical Society, 2010, 157, C61.
- Le Roy, S.; Søndergård, E.; Nerbø, I. S.; Kildemo, M.; Plapp, M. *Diffuse-interface model for nanopatterning induced by self-sustained ion-etch masking*. Physical Review B. Condensed Matter and Materials Physics, 2010, 81, 161401.
- Lervik, A.; Bresme, F.; Kjelstrup, S.; Bedeaux, D.; Rubi, J. M. *Heat transfer in protein-water interfaces*. Physical Chemistry, Chemical Physics - PCCP, 2010, 12, 1610.
- Lervik, I. A.; Tsyppkin, M.; Owe, L.-E.; Sunde, S. *Electronic structure vs. electrocatalytic activity of iridium oxide*. Journal of Electroanalytical Chemistry, 2010, 645, 135.
- Li, Y.; Chen, Y.; Walmsley, J. C.; Mathiesen, R.; Dumoulin, S.; Roven, H. J. *Faceted interfacial structure of {1011} twins in Ti formed during equal channel angular pressing*. Scripta Materialia, 2010, 62, 443.
- Liu, M.; Roven, H. J.; Liu, X. T.; Murashkin, M.; Valiev, R. Z.; Ungar, T.; Balogh, L. *Special nanostructures in Al-Mg alloys subjected to high pressure torsion*. Transactions of Nonferrous Metals Society of China, 2010, 20, 2051.
- Liu, M. P.; Roven, H. J.; Liu, X. T.; Murashkin, M.; Valiev, R. Z.; Ungar, T.; Balogh, L. *Grain refinement in nanostructured Al-Mg alloys subjected to high pressure torsion*. Journal of Materials Science, 2010, 45, 4659.
- Liu, Y.; Monsen, Å. F.; Boschker, J. E.; Wahlström, E.; Borg, A.; Tybell, T. *Nanoscale surface modification of  $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  thin films*. Journal of Vacuum Science & Technology B, 2010, 28, 407.
- Lögdberg, S.; Luaidi, M.; Järås, S.; Walmsley, J. C.; Blekkan, E. A.; Rytter, E.; Holmen, A. *On the selectivity of cobalt-based Fischer-Tropsch catalysts: Evidence for a common precursor for methane and long-chain hydrocarbons*. Journal of Catalysis, 2010, 274, 84.
- Nerbø, I. S.; Le Roy, S.; Foldyna, M.; Kildemo, M.; Søndergård, E. *Characterization of inclined GaSb nanopillars by Mueller matrix ellipsometry*. Journal of Applied Physics, 2010, 108, 014307.
- Ochal, P.; Gomez, J. L. de la F.; Tsyppkin, M.; Garcia-Rodriguez, S.; Seland, F.; Sunde, S. *CO-stripping at Ru nanoparticles*. ECS Transactions, 2010, 28, 9.
- Ofstad, A. B.; Thomassen, M. S.; Gomez, J. L. de la F.; Seland, F.; Møller-Holst, S.; Sunde, S. *Assessment of Platinum Dissolution from a Pt/C Fuel Cell Catalyst: An Electrochemical Quartz Crystal Microbalance Study*. Journal of the Electrochemical Society 2010, 157, B621.
- Owe, L.-E.; Lervik, I. A.; Tsyppkin, M.; Syre, M. V.; Sunde, S. *Electrochemical Behavior of Iridium Oxide Films in Trifluoromethanesulfonic Acid*. Journal of the Electrochemical Society 2010, 157, B1719.
- Pamies, R. F. P.; Volden, S.; Kjøniksen, A.-L.; Zhu, K.; Glomm, W. R.; Nyström, B. *Adsorption of Cationic Hydroxyethylcellulose Derivatives onto Planar and Curved Gold Surfaces*. Langmuir, 2010, 26, 15925.
- Pamies, R. F. P.; Zhu, K.; Volden, S.; Kjøniksen, A.-L.; Karlsson, G.; Glomm, W.; Nyström, B. *Temperature-Induced Flocculation of Gold Particles with an Adsorbed Thermoresponsive Cationic Copolymer*. The Journal of Physical Chemistry, C, 2010, 114, 21960.
- Pauw, B. R.; Vigild, M. E.; Mortensen, K.; Andreasen, J. W.; Klop, E. A.; Breiby, D. W.; Bunk, O. *Strain-induced internal fibrillation in looped aramid filaments*. Polymer, 2010, 51, 4589.
- Petkov, V.; Selbach, S. M.; Einarsrud, M.-A.; Grande, T.; Shastri, S. D. *Melting of Bi Sublattice in Nanosized  $\text{BiFeO}_3$  Perovskite by Resonant X-Ray Diffraction*. Physical Review Letters, 2010, 105, 185501.
- Pezzotta, M.; Zhang, Z. *Effect of thermal mismatch induced residual stresses on grain boundary microcracking of titanium diboride ceramics*. Journal of Materials Science, 2010, 45, 382.
- Ramachandran, A.; Tucho, W. M.; Mejdell, A. L.; Stange, M.; Venvik, H. J.; Walmsley, J. C.; Holmestad, R.; Bredesen, R.; Borg, A. *Surface characterization of Pd/Ag<sub>23</sub> wt% membranes after different thermal treatments*, Applied Surface Science, 2010, 256, 6121.
- Rønning, M.; Tsakoumis, N.; Voronov, A. S.; Johnsen, R. E.; Norby, P.; van Beek, W.; Borg, Ø.; Rytter, E.; Holmen, A. *Combined XRD and XANES studies of a Re-promoted Co/ $\gamma$ - $\text{Al}_2\text{O}_3$  catalyst at Fischer-Tropsch synthesis conditions*. Catalysis Today, 2010, 155, 289.
- Sanz-Navarro, C.; Åstrand, P.-O.; Chen, D.; Rønning, M.; van Duin, A. C. T.; Goddard III, W. A. *Molecular dynamics simulations of metal clusters supported on fishbone carbon nanofibers*. The Journal of Physical Chemistry C, 2010, 114, 3522.
- Saxegaard, M.; Zheng, Y. D.; Wahlström, E.; Brucas, R.; Hanson, M. *Field and current-induced magnetization reversal studied through spatially resolved point-contact*. Journal of Applied Physics, 2010, 107, 103909.
- Sen, D.; Thaulow, C.; Schieffer, S.; Cohen, A.; Buehler, M. J. *Atomistic Study of Crack-Tip Cleavage to Dislocation Emission Transition in Silicon Single Crystals*. Physical Review Letters, 2010, 104, 235502.
- Simon, J. M.; Haas, O.-E.; Kjelstrup, S. *Adsorption and Desorption of  $\text{H}_2$  on Graphite by Molecular Dynamics Simulations*. The Journal of Physical Chemistry C, 2010, 114, 10212.

- Sunde, S.; Lervik, I. A.; Tsykin, M.; Owe, L.-E. *Impedance analysis of nanostructured iridium oxide electrocatalysts*. *Electrochimica Acta*, 2010, 55, 7751.
- Sæterli, R.; Rørvik, P. M. L.; You, C. C.; Holmestad, R.; Tybell, T.; Grande, T.; van Helvoort, A.; Einarsrud, M.-A. *Polarization control in ferroelectric PbTiO<sub>3</sub> nanorods*, *Journal of Applied Physics*, 2010, 108, 124320.
- Sæterli, R.; Selbach, S. M.; Ravindran, P.; Grande, T.; Holmestad, R. *Electronic structure of multiferroic BiFeO<sub>3</sub> and related compounds: Electron energy loss spectroscopy and density functional study*. *Physical Review B. Condensed Matter and Materials Physics*, 2010, 82, 064102.
- Torsæter, M.; Hasting, H. S.; Lefebvre, W.; Marioara, C. D.; Walmsley, J.; Andersen, S. J.; Holmestad, R. *The influence of composition and natural aging on clustering during preaging in Al-Mg-Si alloys*. *Journal of Applied Physics*, 2010, 108, 73527.
- Trinh, L. T. T.; Volden, S.; Kjøniksen, A.-L.; Zhu, K.; Knudsen, K. D.; Glomm, W.; Nyström, B. *Temperature-induced adsorption and optical properties of an amphiphilic diblock copolymer adsorbed onto flat and curved silver surfaces*. *Journal of Colloid and Interface Science*, 2010, 42, 142.
- Tsakoumis, N.; Rønning, M.; Borg, Ø.; Rytter, E.; Holmen, A. *Deactivation of cobalt based Fischer-Tropsch catalysts: A review*. *Catalysis Today*, 2010, 154, 162.
- Tucho, W. M.; Mauroy, H.; Walmsley, J. C.; Deledda, S.; Holmestad, R.; Hauback, B. C. *The effects of ball milling intensity on morphology of multiwall carbon nanotubes*. *Scripta Materialia*, 2010, 63, 637.
- Tunold, R.; Marshall, A.; Rasten, E.; Tsykin, M.; Owe, L.-E.; Sunde, S. *Materials for Electrocatalysis of Oxygen Evolution Process in PEM Water Electrolysis Cells*. *ECS Transactions*, 2010, 25, 103.
- Volden, S.; Kjøniksen, A.-L.; Zhu, K.; Genzer, J.; Nyström, B.; Glomm, W. R. *Temperature-Dependent Optical Properties of Gold Nanoparticles Coated with a Charged Diblock Copolymer and an Uncharged Triblock Copolymer*. *ACS Nano*, 2010, 4, 1187.
- Wang, X. H.; Jacobsen, S.; Lee, S. F.; He, J.; Zhang, Z. *Effect of silica fume, steel fiber and ITZ on the strength and fracture behavior of mortar*. *Materials and Structures*, 2010, 43, 125.
- Williams, M.; Lototsky, M.; Nechaev, A.; Yartys, V.; Solberg, J. K.; Denys, R. V.; Linkov, V. M. *Palladium mixed-metal surface-modified AB[5]-type intermetallics enhance hydrogen sorption kinetics*. *South African Journal of Science*, 2010, 106, 37.
- Yap, S. S.; Salomatova, A. V.; Ladam, C.; Dahl, Ø.; Reenaas, T. W. *Pulsed laser ablation and deposition of silicon*. *Applied Physics A: Materials Science & Processing*, 2010, 101, 765.
- Yasuda, M.; Goda, T.; Ogino, H.; Glomm, W.; Takayanagi, H. *Preparation of uniform monomer droplets using packed column and continuous polymerization in tube reactor*. *Journal of Colloid and Interface Science*, 2010, 349, 392.
- Yasuda, M.; Okamoto, M.; Sugimoto, K.; Glomm, W.; Iwane, K.; Ogino, H.; Ishimi, K.; Ishikawa, H. *Kinetics of Solution Polymerization and Seed Polymerization of 2-p-[1,1,3,3-Tetramethyl-Butyl] Phenoxy-Polyethoxy] Ethyl Methacrylate Macromonomers*. *Journal of chemical engineering of Japan*, 2010, 9, 767.
- Zeng, H.; Cui, J.; Cao, B.; Gibson, U.; Bando, Y.; Golberg, D. *Electrochemical Deposition of ZnO Nanowire Arrays: Organization, Doping, and Properties*. *Science of Advanced Materials*, 2010, 2, 336.
- Zhao, J.; Nagao, S.; Zhang, Z. *The effect of crosslinked and branched polyethylene molecules on the thermo-mechanical properties*. *Trita-MEK*, 2010, 85.
- Zhao, J.; Nagao, S.; Zhang, Z. *Thermomechanical properties dependence on chain length in bulk polyethylene: Coarse-grained molecular dynamics simulations*. *Journal of Materials Research*, 2010, 25, 537.
- Zhao, J., Nagao, S. and Zhang, Z. Kristiansen, H. *Coarse-Grained Molecular Dynamics Simulations on Size Effect of Glassy Polyethylene Particles*, *Journal of Nanoscience and Nanotechnology*, 2010, 10, 7340.

## Nanoelectronics, Nanophotonics and Nanomagnetism

- Alidoust, M.; Linder, J. *Spin-triplet supercurrent through inhomogeneous ferromagnetic trilayers*. *Phys. Rev. B. Condensed Matter and Materials Physics*, 2010, 82, 085316.
- Alidoust, M.; Linder, J.; Rashedi, G.; Yokoyama, T.; Sudbø, A. *Spin-polarized Josephson current in superconductor/ferromagnet/superconductor junctions with inhomogeneous magnetization*. *Phys. Rev. B. Condensed Matter and Materials Physics*, 2010, 81, 205308.
- Bauer, G. E. W.; Bretzel, S.; Brataas, A.; Tserkovnyak, Y. *Nanoscale magnetic heat pumps and engines*. *Phys. Rev. B. Condensed Matter and Materials Physics*, 2010, 81, 024427.
- Bender, S. A.; Tserkovnyak, Y.; Brataas, A. *Microwave response of a magnetic single-electron transistor*. *Phys. Rev. B. Condensed Matter and Materials Physics*, 2010, 82, 180403.

- Bruhn, T.; Passmann, R.; Fimland, B. O.; Kneissl, M.; Esser, N.; Vogt, P. *Adsorbate-induced modification of the surface electric field of GaAs(001)-c(4x4) as measured via the electro-optic effect*. Phys. Status Solidi B, 2010, 247, 1941.
- Bruhn, T.; Fimland, B.O.; Kneissl, M.; Esser N.; Vogt, P. *Adsorbate-induced modification of the surface electronic structure at GaAs(001) surfaces*. Phys. Rev. B, 2011, 83, 045307.
- Folkman, C. M.; Baek, S. H.; Nelson, C. T.; Jang, H. W.; Tybell, T.; Pan, X. Q.; Eom, C. B. *Study of defect-dipoles in an epitaxial ferroelectric thin film*. Appl. Phys. Lett., 2010, 96, 052903.
- Folven, E.; Tybell, T.; Scholl, A.; Young, A.; Retterer, S. T.; Takamura, Y.; Grepstad, J. *Antiferromagnetic Domain Reconfiguration in Embedded LaFeO<sub>3</sub> Thin Film Nanostructures*. Nano Lett. (Print), 2010, 10, 4578.
- Hals, K. M. D.; Brataas, A.; Bauer, G. E. W. *Thermopower and thermally induced domain wall motion in (Ga, Mn)A*. Solid State Comm., 2010, 150, 461.
- Hals, K. M. D.; Brataas, A.; Tserkovnyak, Y. *Scattering theory of charge-current-induced magnetization dynamics*. Europhysics Lett., 2010, 90, 47002.
- Haugen, H.; Huertas-Hernando, D.; Brataas, A.; Waintal, X. *Crossed Andreev reflection versus electron transfer in three-terminal graphene devices*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 174523.
- Herland, E.; Babaev, E.; Sudbø, A. *Phase transitions in a three dimensional U(1)×U(1) lattice London superconductor: Metallic superfluid and charge-4e superconducting states*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 82, 134511.
- Hoang, T. B.; Anthonysamy, F. M.; Ahtapodov, L.; Zhou, H.; Dasa, L. N.; van Helvoort, A.; Fimland, B.-O.; Weman, H. *Engineering Parallel and Perpendicular Polarized Photoluminescence from a Single Semiconductor Nanowire by Crystal Phase Control*. Nano Letters, 2010, 10, 2927.
- Linder, J. *Quantized topological surface states promise a quantum Hall state in topological insulators*, Physics, 2010, 3(66).
- Linder, J.; Black-Schaffer, A.; Sudbø, A. *Triplet proximity effect and odd-frequency pairing in graphene*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 82, 041409.
- Linder, J.; Cuoco, M.; Sudbø, A. *Spin-active interfaces and unconventional pairing in half-metal/superconductor junctions*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 174526.
- Linder, J.; Sudbø, A. *Majorana fermions manifested as interface states in semiconductor hybrid structures*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 82, 085314.
- Linder, J.; Sudbø, A. *Probing phase separation in Bose-Fermi mixtures by the critical superfluid velocity*. Phys. Rev. A. Atomic, Molecular, and Optical Physics, 2010, 81, 013622.
- Linder, J.; Sudbø, A. *Triplet supercurrent due to spin-active zones in a Josephson junction*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 82, 020512.
- Linder, J.; Sudbø, A.; Yokoyama, T.; Grein, R.; Eschrig, M. *Signature of odd-frequency pairing correlations induced by a magnetic interface*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 214504.
- Linder, J., Tanaka, Y., Yokoyama, T., Sudbø, A., Nagaosa, N. *Interplay between superconductivity and ferromagnetism on a topological insulator*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 184525.
- Linder, J.; Tanaka, Y.; Yokoyama, T.; Sudbø, A.; Nagaosa, N. *Unconventional Superconductivity on a Topological Insulator*. Physical Review Letters, 2010, 104, 067001.
- Linder, J.; Yokoyama, T.; Sudbø, A. *Pure spin current generated by reflection at a normal metal/two-dimensional electron gas interface*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 075312.
- Liu, Y.; Monsen, Å. F.; Boschker, J. E.; Wahlström, E.; Borg, A.; Tybell, T. *Nanoscale surface modification of La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> thin films*. Journal of Vacuum Science & Technology B, 2010, 28, 407.
- Mal'shukov, A. G.; Brataas, A. *ac Josephson effect induced by spin injection*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 82, 144511.
- Mal'shukov, A. G.; Sadjina, S. S.; Brataas, A. *Inverse spin Hall effect in superconductor/normal-metal/superconductor Josephson junctions*. Phys. Rev. B. Condensed Matter and Materials Physics, 2010, 81, 060502.
- Nordseth, Ø.; You, C. C.; Folven, E.; Gariglio, S.; Sambri, A.; Triscone, J. M.; Reiner, J. W.; Ahn, C. H.; Tybell, T.; Grepstad, J. *Growth and characterization of (Pb,La)(Zr,Ti)O<sub>3</sub> thin film epilayers on SrTiO<sub>3</sub>-buffered Si(001)*, Thin Solid Films, 2010, 518, 5471.
- Park, J. W.; Baek, S. H.; Wu, P.; Winchester, B.; Nelson, C. T.; Chen, Y.; Pan, X. Q.; Chen, L. Q.; Tybell, T.; Eom, C. B. *Origin of suppressed polarization in BiFeO<sub>3</sub> films*. Appl. Phys. Lett., 2010, 97, 212904.
- Samuelsson, P.; Brataas, A. *Proposal for quantum spin tomography in ferromagnet-normal conductors*. Physical Review B. Condensed Matter and Materials Physics, 2010, 81, 184422.
- Takahashi, R.; Katayama, M.; Dahl, Ø.; Grepstad, J.; Matsumoto, Y.; Tybell, T. *Erratum: "Epilayer control of photodeposited materials during UV photocatalysis" [Appl. Phys. Lett. 94, 232901 (2009)]*. Appl. Phys. Lett., 2010, 97, 059903.
- Takahashi, R.; Valset, K.; Folven, E.; Eberg, E.; Grepstad, J.; Tybell, T. *Long-range spontaneous structural ordering in barium stannate thin films*. Appl. Phys. Lett., 2010, 97, 081906.
- Tanaka, R.; Takata, S.; Katayama, M.; Takahashi, R.; Grepstad, J.; Tybell, T.; Matsumoto, Y. *Photocatalytic synthesis of Silver-Oxide clathrate Ag<sub>8</sub>O<sub>8</sub>AgNO<sub>3</sub>*. Journal of the Electrochemical Society, 2010, 157, Suppl. E, E181.

Zhou, D.; Sharma, G.; Thomassen, S. F.; Reenaas, T. W.; Fimland, B.-O. *Optimization towards high density quantum dots for intermediate band solar cells grown by molecular beam epitaxy*. Appl. Phys. Lett., 2010, 96, 061913.

Zhou, D.; Vullum, P. E.; Sharma, G.; Thomassen, S. F.; Holmestad, R.; Reenaas, T. W.; Fimland, B.-O. *Positioning effects on quantum dot solar cells grown by molecular beam epitaxy*. Appl. Phys. Lett., 2010, 96, 083108.

## Bionanotechnology / Nanomedicine

Arum, C. J.; Kodama, Y.; Rolim, N.; Widerøe, M.; Anderssen, E.; Viset, T.; Otterlei, M.; Lundgren, S.; Chen, D.; Zhao, C. M. *A rat model of intravesical delivery of small interfering RNA for studying urinary carcinoma*. World J. Urol., 2010, 28, 479.

Attramadal, K.; Buran, A.; Øie, G.; Vadstein, O.; Olsen, Y. *Recirculation: Microbial Control Strategy For Intensive Marine Larviculture*. Global Aquaculture Advocate, 2010, 63.

Chytil, M.; Strand, S. P.; Christensen, B. E.; Pekar, M. *Calorimetric and light scattering study of interactions and macromolecular properties of native and hydrophobically modified hyaluronan*. Carbohydrate Polymers, 2010, 81, 855.

Eikenes, L.; Tufto, I.; Schnell E. A.; Bjørkøy, A.; Davies, C. de L. *Effect of collagenase and hyaluronidase on free and anomalous diffusion in multicellular spheroids and xenografts*. AntiCancer Research, 2010, 30, 359.

Fjellheim, A.; Klinkenberg, G.; Skjermo, J.; Aasen, I.-M.; Vadstein, O. *Selection of candidate probiotics by two different screening strategies from Atlantic cod (*Gadus morhua* L.) larvae*. Veterinary Microbiology, 2010, 144, 153.

Gawel, K.; Barriet, D.; Sletmoen, M.; Stokke, B. T. *Responsive Hydrogels for Label-Free Signal Transduction within Biosensors*. Sensors, 2010, 10, 4381.

Hak, S.; Reitan, N. K.; Haraldseth, O.; Davies, C. de L. *Intravital microscopy in window chambers: a unique tool to study tumor angiogenesis and delivery of nanoparticles*. Angiogenesis, 2010, 13, 113.

Halskau jr, Ø.; Volden, S.; Calvo, A. C.; Martinez, A.; Glomm, W. R. *Adsorption and bioactivity of tyrosine hydroxylase on gold surfaces and nanoparticles*. Protein peptide letters, 2010, 17, 1376.

Hess-Erga, O.-K.; Blomvågnes-Bakke, B.; Vadstein, O. *Recolonization by heterotrophic bacteria after UV irradiation or ozonation of seawater; a simulation of ballast water treatment*. Water Research, 2010, 44, 5439.

Jahn, T. R.; Makin, O. S.; Morris, K. L.; Marshall, K.; Tian, P.; Sikorski, P.; Serpell, L. C. *The Common Architecture of Cross-beta Amyloid*. Journal of Molecular Biology, 2010, 395, 717.

Klein, D. C.G.; Latz, E.; Espevik, T.; Stokke, B. T. *Higher order structure of short immunostimulatory oligonucleotides studied by atomic force microscopy*. Ultramicroscopy, 2010, 110, 689.

Kristiansen, K. A.; Potthast, A.; Christensen, B. E. *Periodate oxidation of polysaccharides for modification of chemical and physical properties*. Carbohydrate Research, 2010, 345, 1264.

Mumm, F.; Kemell, M.; Leskelä, M.; Sikorski, P. A *bio-originated porous template for the fabrication of very long, inorganic nanotubes and nanowires*. Bioinspiration & Biomimetics, 2010, 5, 026005.

Olsen, Ø.; Kristoffersen, A.; Thuen, M.; Sandvig, A.; Brekken, C.; Haraldseth, O.; Goa, P. E. *Manganese Transport in the Rat Optic Nerve Evaluated With Spatial- and Time-Resolved Magnetic Resonance Imaging*. Journal of Magnetic Resonance Imaging, 2010, 32, 551.

Reitan, N., K.; Thuen, M.; Goa, P. E.; Davies, C. de L. *Characterization of tumor microvascular structure and permeability: comparison between magnetic resonance imaging and intravital confocal imaging*. Journal of Biomedical Optics, 2010, 15, 036004.

Strand, S. P.; Lelu, S.; Reitan, N. K.; Davies, C. de L.; Artursson, P.; Vårum, K. M. *Molecular design of chitosan gene delivery systems with an optimized balance between polyplex stability and polyplex unpacking*. Biomaterials, 2010, 31, 975.

Tierney, S.; Sletmoen, M.; Skjåk-Bræk, G.; Stokke, B. T. *Interferometric characterization of swelling of covalently crosslinked alginate gel and changes associated with polymer impregnation*. Carbohydrate Polymers, 2010, 80, 828.

Xie, M.; Olderøy, M. Ø.; Andreassen, J.-P.; Selbach, S. M.; Strand, B. L.; Sikorski, P. *Alginate-controlled formation of nanoscale calcium carbonate and hydroxyapatite mineral phase within hydrogel networks*. Acta Biomaterialia, 2010, 6, 3665.



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