

Publication list for AC-(S)TEM for 100-300 kV

2011

- [1] Abe, E. (2011). Global Trend in Aberration Correction Technology for Electron Microscopes and the Current Status in Japan. *Science & Technology Trends* 3, 32-50.
- [2] Aguiar, J., Yang, H., Sarahan, M., & Browning, N. (2011). Interfacial Atomic Structure and Chemistry at Ceria Grain Boundaries. *Microscopy and Microanalysis*, 17, 1248–1249.
- [3] Alaeddine, A., Genevois, C., Chevalier, L., & Daoud, K. (2011). STEM nanoanalysis of Au/Pt/Ti-Si₃N₄ interfacial defects and reactions during local stress of SiGe HBTs. *Nanoscale Research Letters*, 6(1), 574.
- [4] Albrecht, R., Olorundare, O., Oliver, J., & Meyer, D. (2011). Nanoparticle Labels for Co-localization and Correlative Imaging at High Spatial Resolution. *Microscopy and Microanalysis*, 17, 358–359.
- [5] Allard, L., Bigelow, W., Blom, D., & Liu, J. (2011). A Stable Double-Tilt Heating Capability for Precision Atomic-Level Imaging of Catalysts at Elevated Temperatures. *Microscopy and Microanalysis*, 17, 468–469.
- [6] Angeles-Islas, J., Ramirez-Rosales, D., Zamorano-Ulloa, R., & Calderon, H. (2011). Nanoparticles by Mechanochemistry in the Immiscible System Cu-Co. *Microscopy and Microanalysis*, 17, 1838–1839.
- [7] Arredondo, M., Weyland, M., Hambe, M., Ramasse, Q. M., Munroe, P., & Nagarajan, V. (2011). Chemistry of Ruddlesden–Popper planar faults at a ferroelectric–ferromagnet perovskite interface. *Journal of Applied Physics*, 109(8), 084101.

- [8] Baram, M., Garofalini, S., & Kaplan, W. (2011). Order in Nanometer-Thick Intergranular Films at Au-Sapphire Interfaces. *Microscopy and Microanalysis*, 17, 1332–1333.
- [9] Batson, P., Reyes-Coronado, A, Barrera, R., Rivacoba, A, Echenique, P., & Aizpurua, J. (2011). Nanoparticle Movement: Plasmonic Forces and Physical Constraints. *Microscopy and Microanalysis*, 17, 1288–1289.
- [10] Barthel, J., & Thust, A. (2011). REPRINT OF: Aberration measurement in HRTEM: Implementation and diagnostic use of numerical procedures for the highly precise recognition of diffractogram patterns. *Ultramicroscopy*, 111(7), 920–39.
- [11] Barton, B., Rhinow, D., Walter, A., Schröder, R., Benner, G., Majorovits, E., Matijevic, M., Niebel, H., Müller, H., Haider, M., Lacher, M., Schmitz, S., Holik, P., & Kühlbrandt, W. (2011). In-focus electron microscopy of frozen-hydrated biological samples with a Boersch phase plate. *Ultramicroscopy*, 111(12), 1696–1705.
- [12] Baudoin, J., Dukes, M., Jerome, W., & De Jonge, N. (2011). Whole-Cell Analysis of the Effect of Cholesterol on LDL-Gold Nanoparticles Uptake in Macrophages by STEM Tomography and 3D STEM. *Microscopy and Microanalysis*, 17, 968–969.
- [13] Blom, D., Allard, L., & Bigelow, W. (2011). Elevated Temperature Observation of Selective Oxidation Catalyst M1 Along [001]. *Microscopy and Microanalysis*, 17, 482–483.
- [14] Bruno, F. Y., Garcia-Barriocanal, J., Varela, M., Nemes, N. M., Thakur, P., Cezar, J. C., Brookes, N. B., Rivera-Calzada, A., Garcia-Hernandez, M., Leon, C., Okamoto, S., Pennycook, S. J., & Santamaria, J. (2011). Electronic and magnetic reconstructions in La_{0.7}Sr_{0.3}MnO₃/SrTiO₃ heterostructures: a case of enhanced interlayer coupling controlled by the interface. *Physical Review Letters*, 106(14), 147205.
- [15] Calderon, H., & Hernandez-Calderon, I. (2011). High Resolution Investigation on the Structure of Quantum Wells in the System CdSe-ZnSe. *Microscopy and Microanalysis*, 17, 1380–1381.
- [16] Carreño-Gallardo, C., Estrada-Guel, I., Neri-Flores, M., Romero-Romo, M., López-Meléndez, C., & Martínez-Sánchez, R. (2011). Characterization of AgcNP/Al₂O₃

- Composites Prepared by Mechanical Processing in a High Energy Ball Mill. *Microscopy and Microanalysis*, 17, 1430–1431.
- [17] Castro-Guerrero, C. F., Deepak, F. L., Ponce, A., Cruz-Reyes, J., Valle-Granados, M. Del, Fuentes-Moyado, S., Galván, D. H., & José-Yacamán, M. (2011). Structure and catalytic properties of hexagonal molybdenum disulfide nanoplates. *Catalysis Science & Technology*, 1(6), 1024.
- [18] Chang, L.-Y., Osawa, E., & Barnard, A. S. (2011). Confirmation of the electrostatic self-assembly of nanodiamonds. *Nanoscale*, 3(3), 958–62.
- [19] Chi, M., Fell, C., Xu, B., & Meng, S. (2011). Understanding Surface Modification and Electrochemical Cycling Stability of Oxide Cathode Materials for Li-Ion Batteries by Advanced Analytical Transmission Electron Microscopy. *Microscopy and Microanalysis*, 17, 1574–1575.
- [20] Ciston, J., Haigh, S. J., Kim, J. S., Kirkland, A. I., & Marks, L. D. (2011). Optimized conditions for imaging the effects of bonding charge density in electron microscopy. *Ultramicroscopy*, 111(7), 901-911.
- [21] Craven, A., Schaffer, B., & Sarahan, M. (2011). Nanoanalysis of a sub-nanometre reaction layer in a metal inserted high-k gate stack. *Microelectronic Engineering*, 88(7), 1488-1491.
- [22] Deepak, F. L., Esparza, R., Borges, B., Lopez-Lozano, X., & Jose-Yacaman, M. (2011). Direct Imaging and Identification of Individual Dopant Atoms in MoS₂ and WS₂ Catalysts by Aberration Corrected Scanning Transmission Electron Microscopy. *ACS Catalysis*, 1(5), 537-543.
- [23] Deepak, F. L., Esparza, R., Borges, B., López-Lozano, X., & Jose-Yacaman, M. (2011). Rippled and Helical MoS₂ Nanowire Catalysts: An Aberration Corrected STEM Study. *Catalysis Letters*, 141(4), 518-524.
- [24] Du, W., Wang, Q., Saxner, D., Deskins, N. A., Su, D., Krzanowski, J. E., Frenkel, A. I., & Teng, X. (2011). Highly Active Iridium/Iridium-Tin/Tin Oxide Heterogeneous Nanoparticles as Alternative Electrocatalysts for the Ethanol Oxidation Reaction. *Journal of the American Chemical Society*, 133(38), 15172-83.

- [25] Dukes, M. J., Ramachandra, R., Baudoin, J.-P., Gray Jerome, W., & De Jonge, N. (2011). Three-dimensional locations of gold-labeled proteins in a whole mount eukaryotic cell obtained with 3nm precision using aberration-corrected scanning transmission electron microscopy. *Journal of Structural Biology*, 174(3), 552-562.
- [26] Dwyer, C., Weyland, M., Chang, L. Y., & Muddle, B. C. (2011). Combined electron beam imaging and ab initio modeling of T(1) precipitates in Al-Li-Cu alloys. *Applied Physics Letters*, 98, 201909. (3 pages)
- [27] Ek, M., Borgström, M. T., Karlsson, L. S., Hetherington, C. J. D., & Wallenberg, L. R. (2011). Electron Image Series Reconstruction of Twin Interfaces in InP Superlattice Nanowires. *Microscopy and Microanalysis*, 17, 752-758.
- [28] Enyashin, A. N., Yadgarov, L., Houben, L., Popov, I., Weidenbach, M., Tenne, R., Bar-Sadan, M., & Seifert, G. (2011). New Route for Stabilization of 1T-WS₂ and MoS₂ Phases. *The Journal of Physical Chemistry C*, 115, 24586-24591.
- [29] Ezekoye, O. K., Drews, a. R., Jen, H.-W., Kudla, R. J., McCabe, R. W., Sharma, M., Howe, J. Y., Allard, L. F., Graham, G. W., & Pan, X. Q. (2011). Characterization of alumina-supported Pt and Pt-Pd NO oxidation catalysts with advanced electron microscopy. *Journal of Catalysis*, 280(1), 125-136.
- [30] Gai, P. L., Yoshida, K., Shute, C., Jia, X., Walsh, M., Ward, M., Dresselhaus, M. S., Weertman, J. R., & Boyes, E. D. (2011). Probing structures of nanomaterials using advanced electron microscopy methods, including aberration-corrected electron microscopy at the angstrom scale. *Microscopy Research and Technique*, 74(7), 664-670.
- [31] Gazquez, J., Varela, M., Petti, D., Cantoni, M., Rinaldi, C., Brivio, S., & Bertacco, R. (2011). Aberration corrected scanning transmission electron microscopy and electron energy loss spectroscopy studies of epitaxial Fe/MgO/(001)Ge heterostructures. *Journal of Materials Science*, 42(23), 1-5.
- [32] Gu, L., Zhu, C., Li, H., Yu, Y., Li, C., Tsukimoto, S., Maier, J., & Ikuhara, Y. (2011). Direct observation of lithium staging in partially delithiated LiFePO₄ at atomic resolution. *Journal of the American Chemical Society*, 133(13), 4661-4663.

- [33] Haigh, S., Young, N., Sawada, H., Takayanagi, K., & Kirkland, a. (2011). Understanding the In-Situ Reaction of Cerium Oxide Nanoparticles Using Aberration Corrected Exit Wave Restoration and EELS. *Microscopy and Microanalysis*, 17, 1592–1593.
- [34] Hernández-Maldonado, D., Herrera, M., Alonso-González, P., González, Y., González, L., Gazquez, J., Varela, M., Pennycook, S. J., Guerrero-Lebrero, M. D. L. P., Pizarro, J., Galindo, P. L., & Molina, S. I. (2011). Compositional analysis with atomic column spatial resolution by 5th-order aberration-corrected scanning transmission electron microscopy. *Microscopy and Microanalysis*, 17(4), 578-581.
- [35] Hovden, R., Xin, H. L., & Muller, D. A. (2011). Extended Depth of Field for High Resolution Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 17(1), 75-80.
- [36] Huang, R., Ikuhara, Y. H., Mizoguchi, T., Findlay, S. D., Kuwabara, A., Fisher, C. A. J., Moriwake, H., Oki, H., Hirayama, T., & Ikuhara, Y. (2011). Oxygen-vacancy ordering at surfaces of lithium manganese(III,IV) oxide spinel nanoparticles. *Angewandte Chemie International Edition*, 50(13), 3053-3057.
- [37] Ikuhara, Y. (2011). Grain boundary atomic structures and light-element visualization in ceramics: combination of Cs-corrected scanning transmission electron microscopy and first-principles calculations. *Journal of Electron Microscopy*, 60(1), S173-S188.
- [38] Inada, H., Su, D., Egerton, R. F., Konno, M., Wu, L., Ciston, J., Wall, J., & Zhu Y. (2011). Atomic imaging using secondary electrons in a scanning transmission electron microscope: experimental observations and possible mechanisms. *Ultramicroscopy*, 111(7), 865-876.
- [39] Ishikawa, R., Okunishi, E., Sawada, H., Kondo, Y., Hosokawa, F., & Abe, E. (2011). Direct imaging of hydrogen-atom columns in a crystal by annular bright-field electron microscopy. *Nature Materials*, 10(4), 278-281.
- [40] Jang, H. W., Felker, D. A., Bark, C. W., Wang, Y., Niranjana, M. K., Nelson, C. T., Zhang, Y., Su, D., Folkman, C. M., Baek, S. H., Lee, S., Janicka, K., Zhu, Y., Pan, X. Q., Fong, D. D., Tsybmal, E. Y., Rzechowski, M. S., & Eom, C. B. (2011). Metallic and

- Insulating Oxide Interfaces Controlled by Electronic Correlations. *Science*, 331, 886–889.
- [41] Jarvis, K., Deng, Z., Allard, L., Manthiram, a, & Ferreira, P. (2011). Structural Characterization of Li-Excess Cathode Materials for Lithium-Ion Batteries. *Microscopy and Microanalysis*, 17, 1578–1579.
- [42] Jia, C.-L., Urban, K. W., Alexe, M., Hesse, D., & Vrejoiu, I. (2011). Direct observation of continuous electric dipole rotation in flux-closure domains in ferroelectric Pb(Zr,Ti)O₃. *Science*, 331(6023), 1420-1423.
- [43] Kalita, G., Wakita, K., & Umeno, M. (2011). Structural Analysis and Direct Imaging of Rotational Stacking Faults in Few-Layer Graphene Synthesized from Solid Botanical Precursor. *Japanese Journal of Applied Physics*, 50(7), 070106.
- [44] Kim, S., Oshima, Y., Sawada, H., Kaneyama, T., Kondo, Y., Takeguchi, M., Nakayama, Y., Tanishiro, Y., & Takayanagi, K. (2011). Quantitative annular dark-field STEM images of a silicon crystal using a large-angle convergent electron probe with a 300-kV cold field-emission gun. *Journal of Electron Microscopy*, 60(2), 109-116.
- [45] Kobayashi, K., Koshino, M., & Suenaga, K. (2011). Atomically resolved images of I(h) ice single crystals in the solid phase. *Physical Review Letters*, 106(20), 206101.
- [46] Kovacs, A., Sadowski, J., Kasama, T., Domagala, J., Mathieu, R., Dietl, T., & Dunin-Borkowski, R. E. (2011). Voids and Mn-rich inclusions in a (Ga,Mn)As ferromagnetic semiconductor investigated by transmission electron microscopy. *Journal of Applied Physics*, 109(8), 083546.
- [47] Liu, A. C. Y., Paganin, D. M., Bourgeois, L., & Nakashima, P. N. H. (2011). Projected thickness reconstruction from a single defocused transmission electron microscope image of an amorphous object. *Ultramicroscopy*, 111(8), 959-968.
- [48] Lu, X., Jian, Z., Fang, Z., Gu, L., Hu, Y.-S., Chen, W., Wang, Z., & Chen, L. (2011). Atomic-scale investigation on lithium storage mechanism in TiNb₂O₇. *Energy & Environmental Science*, 4(8), 2638.

- [49] Lupini, A. R., & De Jonge, N. (2011). The three-dimensional point spread function of aberration-corrected scanning transmission electron microscopy. *Microscopy and Microanalysis*, 17, 817–826.
- [50] Mayoral, A., Allard, L. F., Ferrer, D., Esparza, R., & Jose-Yacamán, M. (2011). On the behavior of Ag nanowires under high temperature: in situ characterization by aberration-corrected STEM. *Journal of Materials Chemistry*, 21(3), 893.
- [51] Molina, S. I., Guerrero, M. P., Galindo, P. L., Sales, D. L., Varela, M., & Pennycook, S. J. (2011). Calculation of integrated intensities in aberration-corrected Z-contrast images. *Journal of Electron Microscopy*, 60(1), 29–33.
- [52] Nakamichi, H., Yamada, K., & Sato, K. (2011). Sub-nanometre elemental analysis of Cu cluster in Fe-Cu-Ni alloy using aberration corrected STEM-EDS. *Journal of Microscopy*, 242(1), 55–61.
- [53] Nelson, C. T., Winchester, B., Zhang, Y., Kim, S.-J., Melville, A., Adamo, C., Folkman, C. M., Baek, S.-H., Eom, C.-B., Schlom, D. G., Chen, L.-Q., & Pan, X. (2011). Spontaneous vortex nanodomain arrays at ferroelectric heterointerfaces. *Nano Letters*, 11(2), 828–34.
- [54] Schamm-Chardon, S., Coulon, P. E., Lamagna, L., Wiemer, C., Baldovino, S., & Fanciulli, M. (2011). Combining HRTEM-EELS nano-analysis with capacitance-voltage measurements to evaluate high- κ thin films deposited on Si and Ge as candidate for future gate dielectrics. *Microelectronic Engineering*, 88(4), 419–422.
- [55] Schmid, H., Okunishi, E., Oikawa, T., & Mader, W. (2011). Structural and elemental analysis of iron and indium doped zinc oxide by spectroscopic imaging in Cs-corrected STEM. *Micron*, 43(1), 49–56.
- [56] Serpell, C. J., Cookson, J., Ozkaya, D., & Beer, P. D. (2011). Core@shell bimetallic nanoparticle synthesis via anion coordination. *Nature Chemistry*, 3(6), 478–483.
- [57] Small, M. W., Sanchez, S. I., Menard, L. D., Kang, J. H., Frenkel, A. I., & Nuzzo, R. G. (2011). The atomic structural dynamics of γ -Al₂O₃ supported Ir-Pt nanocluster catalysts prepared from a bimetallic molecular precursor: a study using aberration-

corrected electron microscopy and X-ray absorption spectroscopy. *Journal of the American Chemical Society*, 133(10), 3582-3591.

- [58] Takayanagi, K., Kim, S., Lee, S., Oshima, Y., Tanaka, T., Tanishiro, Y., Sawada, H., Hosokawa, F., Tomita, T., Kaneyama, T., & Kondo, Y. (2011). Electron microscopy at a sub-50 pm resolution. *Journal of Electron Microscopy*, 60(1), S239-S244.
- [59] Wang, P., Behan, G., Kirkland, A. I., Nellist, P. D., Cosgriff, E. C., D'Alfonso, A. J., Morgan, A. J., Allen, L. J., Hashimoto, A., Takeguchi, M., Mitsuishi, K., & Shimojo, M. (2011). Bright-field scanning confocal electron microscopy using a double aberration-corrected transmission electron microscope. *Ultramicroscopy*, 111(7), 877-886.
- [60] Wang, Z. W., Toikkanen, O., Quinn, B. M., & Palmer, R. E. (2011). Real-space observation of prolate monolayer-protected Au(38) clusters using aberration-corrected scanning transmission electron microscopy. *Small*, 7(11), 1542-1545.
- [61] Yamazaki, T., Kotaka, Y., & Kataoka, Y. (2011). Analysis of EEL spectrum of low-loss region using the C(s)-corrected STEM-EELS method and multivariate analysis. *Ultramicroscopy*, 111(5), 303-308.
- [62] Yin, F., Wang, Z. W., & Palmer, R. E. (2011). Controlled formation of mass-selected Cu-Au core-shell cluster beams. *Journal of the American Chemical Society*, 133(27), 10325-10327.

2010

- [63] Allard, L. F., Flytzani-Stephanopoulos, M., & Overbury, S. H. (2010). Behavior of Au species in Au/Fe₂O₃ catalysts characterized by novel in situ heating techniques and aberration-corrected STEM imaging. *Microscopy and Microanalysis*, 16(4), 375-385.
- [64] Asoro, M. A., Kovar, D., Shao-Horn, Y., Allard, L. F., & Ferreira, P. J. (2010). Coalescence and sintering of Pt nanoparticles: in situ observation by aberration-corrected HAADF STEM. *Nanotechnology*, 21(2), 025701.

- [65] Azough, F., Freer, R., & Schaffer, B. (2010). Direct Observation of A-Site Vacancies and a Twin Boundary Structure in $\text{La}_{2/3}\text{TiO}_3$ -Based Ceramics Using HAADF/STEM. *Journal of the American Ceramic Society*, 1240(5), 1237-1240.
- [66] Baba-Kishi, K. Z. (2010). Direct observation of B-site cation displacements in Pb-based complex perovskite relaxor oxides. *Journal of Applied Crystallography*, 44(1), 111-121.
- [67] Barton, B., Schultheiss, K., Matijevic, M., Gerthsen, D., & Kühlbrandt, W. (2010). Optimized In-Focus Boersch Phase Contrast in a Dedicated TEM. *Microscopy and Microanalysis*, 16(2), 540-541.
- [68] Braidy, N., Bouar, Y. Le, Lazar, S., & Ricolleau, C. (2010). Detecting and Correcting Instabilities in STEM Images. *Microscopy and Microanalysis*, 16, 10-11.
- [69] Buban, J. P., Ramasse, Q., Gipson, B., Browning, N. D., & Stahlberg, H. (2010). High-resolution low-dose scanning transmission electron microscopy. *Journal of Electron Microscopy*, 59(2), 103-112.
- [70] Cargnello, M., Gentilini, C., Montini, T., Fonda, E., Mehraeen, S., Chi, M., Herrera-Collado, M., Browning, N. D., Polizzi, S., Pasquato, L., & Fornasiero, P. (2010). Active and Stable Embedded Au@CeO_2 Catalysts for Preferential Oxidation of CO. *Chemistry of Materials*, 22(12), 4335-4345.
- [71] Chang, L. Y., Barnard, A. S., Gontard, L. C., & Dunin-Borkowski, R. E. (2010). Resolving the structure of active sites on platinum catalytic nanoparticles. *Nano Letters*, 10(8), 3073-3076.
- [72] Cheng, C.-J., Borisevich, A. Y., Kan, D., Takeuchi, I., & Nagarajan, V. (2010). Nanoscale Structural and Chemical Properties of Antipolar Clusters in Sm-Doped BiFeO_3 Ferroelectric Epitaxial Thin Films. *Chemistry of Materials*, 22(8), 2588-2596.
- [73] Chu, M.-W., Liou, S. C., Chang, C.-P., Choa, F.-S., & Chen, C. H. (2010). Emergent chemical mapping at atomic-column resolution by energy-dispersive x-ray spectroscopy in an aberration-corrected electron microscope. *Physical Review Letters*, 104(19), 196101.

- [74] De Jonge, N., Sougrat, R., Northan, B. M., & Pennycook, S. J. (2010). Three-dimensional scanning transmission electron microscopy of biological specimens. *Microscopy and Microanalysis*, 16(1), 54-63.
- [75] Dudeck, K. J., & Cockayne, D. J. H. (2010). A method for rigid body expansion measurement in the presence of secondary grain boundary dislocations applied to a SrTiO₃ near-Sigma3(112) grain boundary. *Ultramicroscopy*, 110(10), 1320-1323.
- [76] Dudeck, K. J., & Cockayne, D. J. H. (2010). Quantitative high resolution electron microscopy image matching applied to the strontium titanate Sigma3(112) grain boundary. *Journal of Physics: Conference Series*, 241, 012033.
- [77] Dwyer, C., Erni, R., & Etheridge, J. (2010). Measurement of effective source distribution and its importance for quantitative interpretation of STEM images. *Ultramicroscopy*, 110(8), 952-957.
- [78] Nellist, E. H., P. D., Lozano-Perez, S., & Ozkaya, D. (2010). Towards quantitative analysis of core-shell catalyst nano-particles by aberration corrected high angle annular dark field STEM and EDX. *Journal of Physics Conference Series*, 241, 012067.
- [79] Erni, R., Rossell, M. D., & Nakashima, P. N. H. (2010). Optimization of exit-plane waves restored from HRTEM through-focal series. *Ultramicroscopy*, 110(2), 151-161.
- [80] Haigh, S. J., Jiang, B., Alloyeau, D., Kisielowski, C., & Kirkland, A. I. (2010). Recording low spatial frequencies while maintaining information limit resolution using the TEAM I microscope. *Microscopy and Microanalysis*, 16, 524-525.
- [81] Haigh, S. J., Sawada, H., Takayanagi, K., & Kirkland, A. I. (2010). Exceeding Conventional Resolution Limits in High-Resolution Transmission Electron Microscopy Using Tilted Illumination and Exit-Wave Restoration. *Microscopy and Microanalysis*, 16, 409-415.
- [82] Harris, P. J. F., Liu, Z., & Suenaga, K., I. (2010). Imaging the structure of activated carbon using aberration corrected TEM. *Journal of Physics Conference Series*, 241(1), 012050. (4 pages)

- [83] Idrobo, J. C., Chisholm, M. F., Prange, M., Tao, J., Zhu, Y., Ren, Z., Zhao, Pantelides, S. T., & Pennycook, S. J. (2010). Revealing Electronic, Structural and Magnetic Phases in NdFeAsO with Electron Energy-Loss Spectroscopy. *Microscopy and Microanalysis*, 16, 88–89.
- [84] Jia, C. L., Houben, L., Thust, A., & Barthel, J. (2010). On the benefit of the negative-spherical-aberration imaging technique for quantitative HRTEM. *Ultramicroscopy*, 110(5), 500-505.
- [85] Kotaka, Y. (2010). Essential experimental parameters for quantitative structure analysis using spherical aberration-corrected HAADF-STEM. *Ultramicroscopy*, 110(5), 555-562.
- [86] Kotaka, Y., Yamazaki, T., & Kataoka, Y. (2010). Atomic-resolution imaging and analysis with cs-corrected scanning transmission electron microscopy. *Fujitsu Scientific Technical Journal*, 46(3), 249-256.
- [87] Lai, F.-J., Su, W.-N., Sarma, L. S., Liu, D.-G., Hsieh, C.-A., Lee, J.-F., & Hwang, B.-J. (2010). Chemical Dealloying Mechanism of Bimetallic Pt-Co Nanoparticles and Enhancement of Catalytic Activity toward Oxygen Reduction. *Chemistry*, 16(15), 4602-4611.
- [88] Lazar, S., Etheridge, J., & Dwyer, C. (2010). Applications of spherical aberration correction in STEM and TEM. *Microscopy and Microanalysis* 16(2), 68-69.
- [89] Lazar, S., Shao, Y., Gunawan, L., Nechache, R., Pignolet, A., & Botton, G. A. (2010). Imaging, core-loss, and low-loss electron-energy-loss spectroscopy mapping in aberration-corrected STEM. *Microscopy and Microanalysis*, 16(4), 416-424
- [90] Lebeau, J. M., Findlay, S. D., Allen, L. J., & Stemmer, S. (2010). Position averaged convergent beam electron diffraction: theory and applications. *Ultramicroscopy*, 110(2), 118-125.
- [91] Li, F. (2010). Microstructural properties of semiconductor nanostructures. *DPhil. University of Oxford*, 1-202.

- [92] Lim, B., Kobayashi, H., Camargo, P. H. C., Allard, L. F., Liu, J., & Xia, Y. (2010). New insights into the growth mechanism and surface structure of palladium nanocrystals. *Nano Research*, 3(3), 180-188.
- [93] Liu, J., & Allard, L. F. (2010). Surface channeling in aberration-corrected scanning transmission electron microscopy of nanostructures. *Microscopy and Microanalysis*, 16(4), 425-33.
- [94] Lupini, A. R., Wang, P., Nellist, P. D., Kirkland, A. I., & Pennycook, S. J., Aberration measurement using the Ronchigram contrast transfer function. *Ultramicroscopy*, 110(7), 891-898.
- [95] Majorovits, E., Barton, B., Benner, G., Dietl, C., Kühlbrandt, W., Lengweiler, S., Mandler, T., Matijevic, M., Niebel, H., & Schröder, R. R. (2010). Phase Contrast Aberration Corrected Electron Microscope for Phase Plate Imaging. *Microscopy and Microanalysis*, 16(2), 534-535.
- [96] Mariscal, M. M., Olmos-Asar, J. A., Gutierrez-Wing, C., Mayoral, A., & Yacaman, M. J. (2010). On the atomic structure of thiol-protected gold nanoparticles: a combined experimental and theoretical study. *Physical Chemistry Chemical Physics*, 12(37), 11785-11790.
- [97] Marshall, A. F., Goldthorpe, I. A., Adhikari, H., Koto, M., Wang, Y.-C., Fu, L., Olsson, E., & McIntyre, P. C. (2010). Hexagonal close-packed structure of Au nanocatalysts solidified after Ge nanowire vapor-liquid-solid growth. *Nano Letters*, 10(9), 3302-3306.
- [98] Mayoral, A., Blom, D. A., Mariscal, M. M., Guitierrez-Wing, C., Aspiazu, J., & Jose-Yacaman, M. (2010). Gold clusters showing pentagonal atomic arrays revealed by aberration-corrected scanning transmission electron microscopy. *Chemical Communications*, 46(17), 8758-8760.
- [99] Mayoral, A., Mejía-Rosales, S., Mariscal, M. M., Pérez-Tijerina, E., & José-Yacamán, M. (2010). The Co-Au interface in bimetallic nanoparticles: A high resolution STEM study. *Nanoscale*, 2(12), 2647-2651.

- [100] Neiner, D., Okamoto, N. L., Yu, P., Leonard, S., Condrón, C. L., Toney, M. F., Rammasse, Q. M., Browning, N. D., & Kauzlarich, S. M. (2010). Synthesis and characterization of $K(8-x)(H_2)_ySi_46$. *Inorganic Chemistry*, 49(3), 815–822.
- [101] Nellist, P. D., & Kirkland, A. I. (2010). Applications of the Oxford-JEOL aberration-corrected electron microscope. *Philosophical Magazine*, 90(35-36), 4751-4767.
- [102] Nicolopoulos, S., Bultreys, D., Benner, G., Niebel, H., Pavia, G., Gemmi, M., & Janssens, B. (2010). Novel applications of Zeiss Libra 200 Cs corrected TEM with energy filtered precession electron diffraction for structure determination of nanocrystals. *Microscopy and Microanalysis*, 16(2), 26-27.
- [103] Nicolosi, V., Aslam, Z., Kim, J., Krivanek, O. L., Chisholm, M. F., & Pennycook, T. J. (2010). Processing and Aberration-Corrected Imaging of Novel Low-Dimensional Nanostructures. *Microscopy and Microanalysis*, 16, 76–77.
- [104] Ortalan, V., Uzun, A., Gates, B. C., & Browning, N. D. (2010). Towards full-structure determination of bimetallic nanoparticles with an aberration-corrected electron microscope. *Nature Nanotechnology*, 5(12), 843-847.
- [105] Ortalan, V., Uzun, A., Gates, B. C., & Browning, N. D. (2010). Direct imaging of single metal atoms and clusters in the pores of dealuminated HY zeolite. *Nature Nanotechnology*, 5(7), 506-510.
- [106] Oshima, Y., Hashimoto, Y., Tanishiro, Y., Takayanagi, K., Hashikawa, N., & Asayama, K. (2010). Detection of arsenic dopant atoms in a silicon crystal using a spherical aberration corrected scanning transmission electron microscope. *Physical Review B*, 81(3), 1-5.
- [107] Pokrant, S., Merkle, A., & Bell, D. C. (2010). Performance of corrected Transmission Electron Microscopes in combination with an in-column filter and a distortion-free monochromator. *Microscopy and Microanalysis*, 16(2), 46-47.
- [108] Pyrz, W. D., Blom, D. A., Sadakane, M., Kodato, K., Ueda, W., Vogt, T., & Buttrey, D. J. (2010). Atomic-level imaging of Mo-V-O complex oxide phase intergrowth, grain boundaries, and defects using HAADF-STEM. *Proceedings of the National Academy of Sciences of the United States of America*, 107(14), 6152-6157.

- [109] Ross, I. M., Rainforth, W. M., Seabourne, C. R., Scott, A. J., Wang, P., Mendis, B. G., Bleloch, A. L., Reinhard, C., & Hovsepian, P. (2010). Electron energy loss spectroscopy of nano-scale CrAlYN/CrN–CrAlY(O)N/Cr(O)N multilayer coatings deposited by unbalanced magnetron sputtering. *Thin Solid Films*, 518(18), 5121–5127.
- [110] Sader, K., Brown, A., Brydson, R., & Bleloch, A. (2010). Quantitative analysis of image contrast in phase contrast STEM for low dose imaging. *Ultramicroscopy*, 110(10), 1–8.
- [111] Sales, D. L., Varela, M., Pennycook, S. J., Galindo, P. L., González, L., González, Y., Fuster, D., & Molina, S. I. (2010). Morphological evolution of InAs/InP quantum wires through aberration-corrected scanning transmission electron microscopy. *Nanotechnology*, 21(32), 325706.
- [112] Shah, A. B., Ramasse, Q. M., Zhai, X., Wen, J. G., May, S. J., Petrov, I., Bhattacharya, A., Abbamonte, P., Eckstein, J. N., & Zuo, J.-M. (2010). Probing interfacial electronic structures in atomic layer LaMnO(3) and SrTiO(3) superlattices. *Advanced Materials*, 22(10), 1156–1160.
- [113] Sivaramakrishnan, S., Wen, J., Scarpelli, M. E., Pierce, B. J., & Zuo, J.-M. (2010). Equilibrium shapes and triple line energy of epitaxial gold nanocrystals supported on TiO₂(110). *Physical Review B*, 82(19), 195421.
- [114] Soutanidis, N., Zhou, W., Psarras, A. C., Gonzalez, A. J., Iliopoulou, E. F., Kiely, C. J., Wachs, I. E., & Wong, M. S. (2010). Relating n-pentane isomerization activity to the tungsten surface density of WO_x/ZrO₂. *Journal of the American Chemical Society*, 132(38), 13462–13471.
- [115] Su, D., & Zhu, Y. (2010). Scanning moiré fringe imaging by scanning transmission electron microscopy. *Ultramicroscopy*, 110(3), 229–33.
- [116] Spiecker, E., Garbrecht, M., Jäger, W., & Tillmann, K. (2010). Advantages of aberration correction for HRTEM investigation of complex layer compounds. *Journal of Microscopy*, 237(3), 341–346.
- [117] Uzun, A., Ortalan, V., Browning, N. D., & Gates, B. C. (2010). A site-isolated mononuclear iridium complex catalyst supported on MgO: Characterization by

- spectroscopy and aberration-corrected scanning transmission electron microscopy. *Journal of Catalysis*, 269(2), 318-328.
- [118] Vallet-Regí, M., Manzano, M., González-Calbet, J. M., & Okunishi, E. (2010). Evidence of drug confinement into silica mesoporous matrices by STEM spherical aberration corrected microscopy. *Chemical Communications*, 46(17), 2956-2958.
- [119] Wang, D., Villa, A., Spontoni, P., Su, D. S., & Prati, L. (2010). In situ formation of Au-Pd bimetallic active sites promoting the physically mixed monometallic catalysts in the liquid-phase oxidation of alcohols. *Chemistry*, 16(33), 10007-10013.
- [120] Wang, P., Behan, G., Kirkland, A. I., & Nellist, P. D. (2010). Experimental setup for energy-filtered scanning confocal electron microscopy (EFSCEM) in a double aberration-corrected transmission electron microscope. *Journal of Physics Conference Series*, 241, 012012.
- [121] Wang, D., Villa, A., Spontoni, P., Su, D. S., and Prati, L., In situ formation of Au-Pd bimetallic active sites promoting the physically mixed monometallic catalysts in the liquid-phase oxidation of alcohols. *Chemistry*, 16(33), 10007-10013.
- [122] Yamazaki, T., Kotaka, Y., Tsukada, M., and Kataoka, Y. (2010). Study of atomic resolved plasmon-loss image by spherical aberration-corrected STEM-EELS method. *Ultramicroscopy*, 110(9), 1161-1165.
- [123] Yi, F., Tiemeijer, P., & Voyles, P. M. (2010). Flexible formation of coherent probes on an aberration-corrected STEM with three condensers. *Journal of Electron Microscopy*, 59, S15-S21.
- [124] Yu, R., Hu, L. H., Cheng, Z. Y., Li, Y. D., Ye, H. Q., & Zhu, J. (2010). Direct sub-ångstrom measurement of surfaces of oxide particles. *Physical Review Letters*, 105(22), 226101.
- [125] Yu, W., & Mader, W. (2010). Displacement field measurement of metal sub-lattice in inversion domains of indium-doped zinc oxide. *Ultramicroscopy*, 110(5), 411-417.

- [126] Abe, E., Seki, T., & Pennycook, S. (2009). Quantitative Analysis of Point Defects in an Ideal Quasicrystal by Aberration-Corrected Z-Contrast STEM. *Microscopy and Microanalysis*, 15, 772.
- [127] Abe, Y., Tanaka, T., Sawada, H., Okunishi, E., Kondo, Y., Tanishiro, Y., & Takayanagi, K. (2009). Electron Energy Loss Spectroscopy of Graphene Identified by Aberration Corrected TEM at 300kV. *Microscopy and Microanalysis*, 15, 1484–1485.
- [128] Allard, L., Borisevich, A., Deng, W., Si, R., Flytzani-Stephanopoulos, M., & Overbury, S. (2009). Behavior of Au Species in Au/FeO_x Catalysts as a Result of In-Situ Thermal Treatments, Characterized via Aberration-Corrected STEM Imaging. *Microscopy and Microanalysis*, 15, 1482–1483.
- [129] Allard, L. F., More, K. L., Liu, J. J., & Louis, S. (2009). Applications of High-Resolution Aberration-Corrected STEM Imaging to Studies of the Behavior of Nanophase Materials at Elevated Temperatures. *Microscopy and Microanalysis*, 15, 130–131.
- [130] Alloyeau, D., Freitag, B., Dag, S., Wang, L. W., & Kisielowski, C. (2009). Atomic-resolution three-dimensional imaging of germanium self-interstitials near a surface: Aberration-corrected transmission electron microscopy. *Physical Review B*, 80(1), 1–6.
- [131] Bangert, U., Gass, M. H., Bleloch, A. L., Nair, R. R., & Geim, A. K. (2009). Manifestation of ripples in free-standing graphene in lattice images obtained in an aberration-corrected scanning transmission electron microscope. *Physica Status Solidi A*, 206(6), 1117–1122.
- [132] Behan, G., Cosgriff, E. C., Kirkland, A. I., & Nellist, P. D. (2009). Three-dimensional imaging by optical sectioning in the aberration-corrected scanning transmission electron microscope. *Philosophical Transactions of the Royal Society A*, 367(1903), 3825–3844.
- [133] Bonifacio, C. S., Thron, A. M., Pennycook, S. J., Contescu, C. I., Gallego, N. C., & Van Benthem, K. (2009). Atomic Resolution Investigation of metal-Assisted Hydrogen Storage Mechanisms in Activated Carbon Fibers. *Microscopy and Microanalysis*, 15, 1426–1427.

- [134] Bowers, M. J., McBride, J. R., Garrett, M. D., Sammons, J. A., Dukes, A. D., Schreuder, M. A., Watt, T. L., Lupini, A. R., Pennycook, S. J., & Rosenthal, S. J. (2009). Structure and ultrafast dynamics of white-light-emitting CdSe nanocrystals. *Journal of the American Chemical Society*, 131(16), 5730-5731.
- [135] Chang, H., Borisevich, A., Balke, N., Kalinin, S., Ramesh, R., Huijben, M., & Pennycook, S. (2009). Interfacial Structure in Multiferroic BiFeO₃ Thin Films. *Microscopy and Microanalysis*, 15, 1028-1029.
- [136] Ciston, J. W. (2009). Crystallographic perturbations to valence charge density and hydrogen-surface interactions. *DPhil. Northwestern University*, ProQuest Dissertations and Theses, 1-279.
- [137] Cockayne, D., Kirkland, A. I., Nellist, P. D., & Bleloch, A. (2009). New possibilities with aberration-corrected electron microscopy. *Philosophical Transactions of the Royal A*, 367(1903), 3633-3635.
- [138] Erni, R., Rossell, M. D., Kisielowski, C., & Dahmen, U. (2009). Atomic-resolution imaging with a sub-50-pm electron probe. *Physical Review Letters*, 102(9), 096101.
- [139] Gai, P. L., & Boyes, E. D. (2009). Advances in atomic resolution in situ environmental transmission electron microscopy and 1Å aberration corrected in situ electron microscopy. *Microscopy Research and Technique*, 72(3), 153-164.
- [140] Gai, P. L., Montero, J. M., Lee, A. F., Wilson, K., & Boyes, E. D. (2009). In situ aberration corrected-transmission electron microscopy of magnesium oxide nanocatalysts for biodiesels. *Catalysis Letters*, 132(1-2), 182-188.
- [141] Germinario, L., & Allard, L. (2009). Development of Protocols Suitable for Atomic-Scale Imaging of Catalyst Clusters at Catalytic Temperatures. *Microscopy and Microanalysis*, 15, 1208-1209.
- [142] Haider, M., Hartel, P., Müller, H., Uhlemann, S., & Zach, J. (2009). Current and future aberration correctors for the improvement of resolution in electron microscopy. *Philosophical Transactions of the Royal Society A*, 367(1903), 3665-3682.

- [143] Haigh, S. J., Sawada, H., & Kirkland, A. I. (2009). Optimal tilt magnitude determination for aberration-corrected super resolution exit wave function reconstruction. *Philosophical Transactions of the Royal Society A*, 367(1903), 3755–3771.
- [144] Haigh, S., Sawada, H., & Kirkland, A. (2009). Atomic Structure Imaging Beyond Conventional Resolution Limits in the Transmission Electron Microscope. *Physical Review Letters*, 103(12), 16–19.
- [145] Hansen, T., Wagner, J., Jinschek, J., & Dunin-Borkowski, R. (2009). The Titan Environmental Transmission Electron Microscope: Specifications, Considerations and First Results. *Microscopy and Microanalysis*, 15, 714–715.
- [146] Houdellier, F. (2009). La correction d'aberration spherique image: applications en imagerie et diffraction. *DPhil. University of Paris*, 22–26 June 2009.
- [147] Idrobo, J. C., Oxley, M. P., Walkosz, W., Klie, R. F., Ö, S., & Mikielj, B. (2009). Direct Imaging of Light Elements in Aberration-Corrected Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 15, 1480–1481.
- [148] Inada, H., Wu, L., Wall, J., Su, D., & Zhu, Y. (2009). Performance and image analysis of the aberration-corrected Hitachi HD-2700C STEM. *Journal of Electron Microscopy*, 58(3), 111–122.
- [149] Jia, C., Mi, S., Faley, M., Poppe, U., Schubert, J., & Urban, K. (2009). Oxygen octahedron reconstruction in the SrTiO₃/LaAlO₃ heterointerfaces investigated using aberration-corrected ultrahigh-resolution transmission electron microscopy. *Physical Review B*, 79(8), 2–5.
- [150] Jin, C., Lin, F., Suenaga, K., & Iijima, S. (2009). Fabrication of a freestanding boron nitride single layer and its defect assignments. *Physical Review Letters*, 102(19), 195505.
- [151] Jin, C., Suenaga, K., & Iijima, S. (2009). In-Situ HR-TEM Characterizations on Individual Carbon Nanotubes During its Manipulation, Deformation and Growth. *Microscopy and Microanalysis*, 15, 710–711.

- [152] Klie, R. F., Yang, G., Ramasse, Q., Posadas, A. B., & Ahn, C. H. (2009). Variable-temperature EELS study of magnetic transitions in LaCoO₃ thin films. *Microscopy and Microanalysis*, 15, 108–109.
- [153] Koshino, M., Solin, N., Niimi, Y., Tanaka, T., Isobe, H., & Nakamura, E. (2009). Passage of Single Hydrocarbon Chains through a defect of Carbon Nanotube. *Microscopy and Microanalysis*, 15, 1208–1209.
- [154] Kovács, A., Sato, K., Lazarov, V. K., Galindo, P. L., Konno, T. J., & Hirotsu, Y. (2009). Direct observation of a surface induced disordering process in magnetic nanoparticles. *Physical Review Letters*, 103(11), 115703.
- [155] Krogstrup, P., Yamasaki, J., Sorensen, C. B., Johnson, E., Wagner, J. B., Pennington, R., Aagesen, M., Tanaka, N., and Nygard, J. (2009). Junctions in axial III-V heterostructure nanowires obtained via an interchange of group III elements. *Nano Letters*, 9(11), 3689–3693.
- [156] Kuramochi, K., Yamazaki, T., Kotaka, Y., Ohtsuka, M., Hashimoto, I., & Watanabe, K. (2009). Effect of chromatic aberration on atomic-resolved spherical aberration corrected STEM images. *Ultramicroscopy*, 110(1), 36–42.
- [157] Lichte, H., Geiger, D., & Linck, M. (2009). Off-axis electron holography in an aberration-corrected transmission electron microscope. *Philosophical Transactions of the Royal Society A*, 367(1903), 3773–3793.
- [158] Ling, T., Xie, L., Zhu, J., Yu, H., Ye, H., Yu, R., Cheng, Z., Liu, L., Yang, G., Cheng, Z., Wang, Y., & Ma, X. (2009). Icosahedral face-centered cubic Fe nanoparticles: facile synthesis and characterization with aberration-corrected TEM. *Nano Letters*, 9(4), 1572–1576.
- [159] Lupini, A. R., Borisevich, A. Y., Idrobo, J. C., Christen, H. M., Biegalski, M., & Pennycook, S. J. (2009). Characterizing the two- and three-dimensional resolution of an improved aberration-corrected STEM. *Microscopy and Microanalysis*, 15(5), 441–453.
- [160] Lupini, A. R., Veith, G. M., Dudney, N. J., & Pennycook, S. J. (2009). Understanding Catalyst Stability Through Aberration-corrected STEM. *Microscopy and Microanalysis*, 15, 1408–1409.

- [161] McBride, J. R., Lupini, A. R., Schreuder, M. A., Smith, N. J., Pennycook, S. J., & Rosenthal, S. J. (2009). Few-layer graphene as a support film for transmission electron microscopy imaging of nanoparticles. *ACS Applied Materials Interfaces*, 1(12), 2886-2892.
- [162] Miao, L., Tanemura, S., Jiang, T., Tanemura, M., Yoshida, K., Tanaka, N., & Xu, G. (2009). The first observation of titanate nanotubes by spherical aberration corrected high-resolution transmission electron microscopy. *Superlattices and Microstructures*, 46(1-2), 357-364.
- [163] Molina, S. I., Sales, D. L., Galindo, P. L., Fuster, D., González, Y., Alén, B., González, L., Varela, M., & Pennycook, S. J. (2009). Column-by-column compositional mapping by Z-contrast imaging. *Ultramicroscopy*, 109(2), 172-176.
- [164] Northan, B., Sougrat, R., & de Jonge, N. (2009). Guidelines for Adapting Light Microscopy Deconvolution Methods to 3D Biological STEM. *Microscopy and Microanalysis*, 15, 628-629.
- [165] Oshima, Y., Hashimoto, Y., Sawada, H., Hashikawa, N., Asayama, K., Kondo, Y., Tanishiro, Y., & Takayanagi, K. (2009). Detection of Arsenic Dopant Atoms in Silicon Crystal by Aberration Corrected Scanning Transmission Electron Microscope. *Microscopy and Microanalysis*, 15(2), 1488-1489.
- [166] Pan, Y.-H., Sader, K., Powell, J. J., Bleloch, A., Gass, M., Trinick, J., Warley, A., Li, A., Brydson, R., & Brown, A. (2010). 3D morphology of the human hepatic ferritin mineral core: New evidence for a subunit structure revealed by single particle analysis of HAADF-STEM images. *Journal of Structural Biology*, 166(1), 22-31.
- [167] Redígolo, M. L., Koktysh, D. S., Van Benthem, K., Rosenthal, S. J., & Dickerson, J. H. (2009). Europium sulfide nanoparticles in the sub-2nm size regime. *Materials Chemistry and Physics*, 115(2-3), 526-529.
- [168] Rodriguez-Manzo, J. A., & Banhart, F. (2009). Creation of individual vacancies in carbon nanotubes by using an electron beam of 1 Å diameter. *Nano Letters*, 9(6), 2285-2289.

- [169] Sanchez, S. I., Small, M. W., Zuo, J.-M., & Nuzzo, R. G. (2009). Structural characterization of Pt-Pd and Pd-Pt core-shell nanoclusters at atomic resolution. *Journal of the American Chemical Society*, 131(24), 8683-8689.
- [170] Sato, K., Konno, T. J., & Hirotsu, Y. (2009). Atomic structure imaging of L1[₀]-type FePd nanoparticles by spherical aberration corrected high-resolution transmission electron microscopy. *Journal of Applied Physics*, 105(3), 034308.
- [171] Sawada, H., Tanishiro, Y., Ohashi, N., Tomita, T., Hosokawa, F., Kaneyama, T., Kondo, Y., & Takayanagi, K. (2009). STEM imaging of 47-pm-separated atomic columns by a spherical aberration-corrected electron microscope with a 300-kV cold field emission gun. *Journal of Electron Microscopy*, 58(6), 357-361.
- [172] Shah, A., Ramasse, Q. M., May, S., Santos, T., Wen, J.-G., Zhai, X., Eckstein, J. N., & Zuo, J.-M. (2009). The Atomic Structure of Oxide Superlattices Revealed by Fine Electron Probes. *Microscopy and Microanalysis*, 15, 110-111.
- [173] Shang, N., Papakonstantinou, P., Wang, P., Zakharov, A., Palnitkar, U., Lin, I.-N., Chu, M., & Stamboulis, A. (2009). Self-assembled growth, microstructure, and field-emission high-performance of ultrathin diamond nanorods. *ACS nano*, 3(4), 1032-1038.
- [174] Shibata, N., Findlay, S. D., Azuma, S., Mizoguchi, T., Yamamoto, T., & Ikuhara, Y. (2009). Atomic-scale imaging of individual dopant atoms in a buried interface. *Nature Materials*, 8, 654-658.
- [175] Sorbello, F., Hughes, G. M., Lejcek, P., Heard, P. J., & Flewitt, P. E. J. (2009). Preparation of location-specific thin foils from Fe-3% Si bi- and tri-crystals for examination in a FEG-STEM. *Ultramicroscopy*, 109(2), 147-153.
- [176] Srinivasan, R., Banerjee, R., Hwang, J. Y., Viswanathan, G. B., Tiley, J., Dimiduk, D. M., & Fraser, H. L. (2009). Atomic scale structure and chemical composition across order-disorder interfaces. *Physical Review Letters*, 102(8), 086101.
- [177] Urban, K. W., Jia, C.-L., Houben, L., Lentzen, M., Mi, S.-B., & Tillmann, K. (2009). Negative spherical aberration ultrahigh-resolution imaging in corrected transmission electron microscopy. *Philosophical Transactions A*, 367(1903), 3735-3753.

- [178] Uzun, A., Ortalan, V., Browning, N. D., & Gates, B. C. (2009). Site-isolated iridium complexes on MgO powder: individual Ir atoms imaged by scanning transmission electron microscopy. *Chemical Communications*, 31, 4657-4659.
- [179] Uzun, A., Ortalan, V., Hao, Y., Browning, N. D., & Gates, B. C. (2009). Nanoclusters of gold on a high-area support: almost uniform nanoclusters imaged by scanning transmission electron microscopy. *ACS nano*, 3(11), 3691-3695.
- [180] Van Benthem, K., & Pennycook, S. J. (2009). Imaging and spectroscopy of defects in semiconductors using aberration-corrected STEM, *Applied Physics A*, 96(1), 161-169.
- [181] Van Huis, M. A., Young, N. P., Pandraud, G. A., Creemer, J. F., Vanmaekelbergh, D. A., Kirkland, A. I., & Zandbergen, H. W. (2009). Atomic Imaging of Phase Transitions and Morphology Transformations in Nanocrystals, *Advanced Materials*, 21(48), 4992-4995.
- [182] Wang, J. X., Inada, H., Wu, L., Zhu, Y., Choi, Y., Liu, P., Zhou, W.-P., Adzic, R. R. (2009). Oxygen reduction on well-defined core-shell nanocatalysts: particle size, facet, and Pt shell thickness effects. *Journal of the American Chemical Society*, 131(47), 17298-17302.
- [183] Xin, H. L., & Muller, D. A., Aberration-corrected ADF-STEM depth sectioning and prospects for reliable 3D imaging in S/TEM. *Journal of Electron Microscopy*, 58(3), 157-165.
- [184] Yang, G., Ramasse, Q. M., & Klie, R. F. (2009). Atomic-resolution STEM and variable-temperature EELS Studies of Thermoelectric Ca₃Co₄O₉. *Microscopy and Microanalysis*, 15, 442-443.
- [185] Yoshida, K., Miao, L., Tanaka, N., & Tanemura, S. (2009). Direct observation of TiO₆ octahedron forming titanate nanotube by advanced. *Nanotechnology*, 20(40), 405709.
- [186] Zhang, Z., and Kaiser, U. (2009). Structural imaging of beta-Si₃N₄ by spherical aberration-corrected high-resolution transmission electron microscopy. *Ultramicroscopy*, 109(9), 1114-1120.

[187] Zhu, Y., Inada, H., Nakamura, K., & Wall, J. (2009). Imaging single atoms using secondary electrons with an aberration-corrected electron microscope. *Nature Materials*, 8(10), 808-812.

2008

[188] Baram, M., & Kaplan, W. D. (2008). Quantitative HRTEM analysis of FIB prepared specimens. *Journal of Microscopy*, 232(3), 395-405.

[189] Behan, G., & Nellist, P. D. (2008). Optical depth sectioning in the aberration-corrected scanning transmission and scanning confocal electron microscope. *Journal of Physics Conference Series*, 126, 012083.

[190] Blom, D. A., Allard, L. F., Narula, C. K., & Moses-DeBusk, M. J. (2008). Aberration-corrected STEM imaging of Ag on gamma-Al₂O₃. *Microscopy and Microanalysis*, 14(1), 98-103.

[191] Chang, L., Maunders, C., Baranova, E., Bock, C., & Botton, G. (2008). Quantitative characterisation of surfaces and defects on PtRu nanoparticles using combined exit wave restoration and aberration-corrected TEM. *Microscopy and Microanalysis*, 14, 426-427.

[192] Chung, J., & Rabenberg, L. (2008). Effects of strain gradients on strain measurements using geometrical phase analysis in the transmission electron microscope. *Ultramicroscopy*, 108(12), 1595-1602.

[193] Cosgriff, E. C., D'Alfonso, A. J., Allen, L. J., Findlay, S. D., Kirkland, A. I., & Nellist, P. D. (2008). Three-dimensional imaging using aberration-corrected scanning transmission and confocal electron microscopy. *Journal of Physics Conference Series*, 126, 012036.

[194] D'Alfonso, A. J., Cosgriff, E. C., Findlay, S. D., Behan, G., Kirkland, A. I., Nellist, P. D., & Allen, L. J. (2008). Three-dimensional imaging in double aberration-corrected

- scanning confocal electron microscopy, part I: elastic scattering. *Ultramicroscopy*, 108(12), 1567-1578.
- [195] Dwyer, C., Erni, R., & Etheridge, J. (2008). Method to measure spatial coherence of sub-ångstrom electron beams. *Applied Physics Letters*, 93(2), 021115.
- [196] Erni, R., Lazar, S., & Browning, N. D. (2008). Prospects for analyzing the electronic properties in nanoscale systems by VEELS. *Ultramicroscopy*, 108(3), 270-276.
- [197] Evans, J. E., Hetherington, C., Kirkland, A., Chang, L.-Y., Stahlberg, H., & Browning, N. (2008). Low-dose aberration corrected cryo-electron microscopy of organic specimens. *Ultramicroscopy*, 108(12), 1636-1644.
- [198] Ferreira, P., Allard, L., Chen, S., Yabuuchi, N., & Shao-Horn, Y. (2008). Surface Segregation and Ordering in Pt₃Co Nanoparticles Observed by Aberration-Corrected STEM. *Microscopy and Microanalysis*, 14, 218-219.
- [199] Ferrer, D., Blom, D. A., Allard, L. F., Mejía, S., Pérez-Tijerina, E., & José-Yacamán, M. (2008). Atomic structure of three-layer Au/Pd nanoparticles revealed by aberration-corrected scanning transmission electron microscopy. *Journal of Materials Chemistry*, 18(21), 2442.
- [200] Furuya, K. (2008). Nanofabrication by advanced electron microscopy using intense and focused beam. *Science and Technology of Advanced Materials*, 9(1), 014110.
- [201] Gancs, L., Kobayashi, T., Debe, M. K., Atanasoski, R., & Wieckowski, A. (2008). Crystallographic Characteristics of Nanostructured Thin-Film Fuel Cell Electrocatalysts: A HRTEM Study. *Chemistry of Materials*, 20(7), 2444-2454.
- [202] Gass, M. H., Bangert, U., Bleloch, A. L., Wang, P., Nair, R. R., & Geim, A. K. (2008). Free-standing graphene at atomic resolution. *Nature Nanotechnology*, 3(11), 676-681.
- [203] Geiger, D., Lichte, H., Linck, M., & Lehmann, M. (2008). Electron holography with a Cs-corrected transmission electron microscope. *Microscopy and Microanalysis*, 14(1), 68-81.

- [204] Guan, L., Suenaga, K., & Iijima, S. (2008). Smallest carbon nanotube assigned with atomic resolution accuracy. *Nano Letters*, 8(2), 459-462.
- [205] Harris, P. J. F., Liu, Z., & Suenaga, K. (2008). Imaging the atomic structure of activated carbon. *Journal of Physics: Condensed Matter*, 20(36), 362201.
- [206] Herzing, A. A., Kiely, C. J., Carley, A. F., Landon, P., & Hutchings, G. J. (2008). Identification of active gold nanoclusters on iron oxide supports for CO oxidation. *Science*, 321(5894), 1331-1335.
- [207] Herzing, A. A., Watanabe, M., Edwards, J. K., Conte, M., Tang, Z. R., Hutchings, G. J., & Kiely, C. J. (2008). Energy dispersive X-ray spectroscopy of bimetallic nanoparticles in an aberration corrected scanning transmission electron microscope. *Faraday Discussions*, 138, 337-351; discussion 421-434.
- [208] Hetherington, C. J. D., Chang, L.-Y. S., Haigh, S., Nellist, P. D., Gontard, L. C., Dunin-Borkowski, R. E., & Kirkland, A. I. (2008). High-resolution TEM and the application of direct and indirect aberration correction. *Microscopy and Microanalysis*, 14(1), 60-67.
- [209] Houdellier, F., & Hÿtch, M. J. (2008). Diffracted phase and amplitude measurements by energy-filtered convergent-beam holography (CHEF). *Ultramicroscopy*, 108(3), 285-294.
- [210] Huang, R., Mizoguchi, T., Sugiura, K., Ohta, H., Koumoto, K., Hirayama, T., & Ikuhara, Y. (2008). Direct observations of Ca ordering in Ca_{0.33}CoO₂ thin films with different superstructures. *Applied Physics Letters*, 93(18), 3.
- [211] Hÿe, F., Hÿtch, M., Bender, H., Houdellier, F., & Claverie, A. (2008). Direct mapping of strain in a strained silicon transistor by high-resolution electron microscopy. *Physical Review Letters*, 100(15), 156602.
- [212] Inada, H., Zhu, Y., Wall, J., Volkov, V., Nakamura, K., Konno, M., Jarausch, K., & Twesten, R. D. (2008). The Newly Installed Aberration Corrected and Dedicated STEM (Hitachi HD2700C) at Brookhaven National Laboratory. *Microscopy and Microanalysis*, 14, 1374-1375.

- [213] Jia, C.-L., Mi, S.-B., Urban, K., Vrejoiu, I., Alexe, M., & Hesse, D. (2008). Atomic-scale study of electric dipoles near charged and uncharged domain walls in ferroelectric films. *Nature Materials*, 7(1), 57-61.
- [214] Johnson, C. L., Snoeck, E., Ezcurdia, M., Rodríguez-González, B., Pastoriza-Santos, I., Liz-Marzán, L. M., & Hÿtch, M. J. (2008). Effects of elastic anisotropy on strain distributions in decahedral gold nanoparticles. *Nature Materials*, 7(2), 120-124.
- [215] Kirkland, A., Chang, L., Haigh, S., & Hetherington, C. (2008). Transmission electron microscopy without aberrations: Applications to materials science. *Current Applied Physics*, 8(3-4), 425-428.
- [216] Kirkland, A., Nellist, P. D., Chang, L.-Y., & Haigh, S. (2008). Aberration-Corrected Imaging in Conventional Transmission Electron Microscopy and Scanning Transmission Electron Microscopy. In: *Advances in Imaging and Electron Physics*, 153, Elsevier Science.
- [217] Klie, R. F., Johnson, C., & Zhu, Y. (2008). Atomic-resolution STEM in the aberration-corrected JEOL JEM2200FS. *Microscopy and Microanalysis*, 14(1), 104-112.
- [218] Krivanek, O. L., Corbin, G. J., Dellby, N., Elston, B. F., Keyse, R. J., Murfitt, M. F., Own, C. S., Szilagy, Z. S., & Woodruff, J. W. (2008). An electron microscope for the aberration-corrected era. *Ultramicroscopy*, 108(3), 179-195.
- [219] Lentzen, M. (2008). Contrast transfer and resolution limits for sub-ångstrom high-resolution transmission electron microscopy. *Microscopy and Microanalysis*, 14(1), 16-26.
- [220] Li, Z. Y., Young, N. P., Di Vece, M., Palomba, S., Palmer, R. E., Bleloch, A. L., Curley, B. C., Johnston, R. L., Jiang, J., & Yuan, J. (2008). Three-dimensional atomic-scale structure of size-selected gold nanoclusters. *Nature*, 451(7174), 46-48.
- [221] Maccagnano-Zacher, S. E., Mkhoyan, K. A., Kirkland, E. J., & Silcox, J. (2008). Effects of tilt on high-resolution ADF-STEM imaging. *Ultramicroscopy*, 108(8), 718-726.

- [222] Maccagnano-Zacher, S., Mkhoyan, A., & Silcox, J. (2008). High-resolution electron imaging of amorphous layers with aberration-corrected probes. *Microscopy and Microanalysis*, 14, 940-941.
- [223] Meyer, J. C., Girit, C. O., Crommie, M. F., & Zettl, A. (2008). Imaging and dynamics of light atoms and molecules on graphene. *Nature*, 454(7202), 319-322.
- [224] Mi, S.-B., Jia, C.-L., Vaithyanathan, V., Houben, L., Schubert, J., Schlom, D. G., & Urban, K. (2008). Atomic structure of the interface between SrTiO₃ thin films and Si(001) substrates. *Applied Physics Letters*, 93(10), 101913.
- [225] Morishita, S., Yamasaki, J., Nakamura, K., Kato, T., & Tanaka, N. (2008). Diffractive imaging of the dumbbell structure in silicon by spherical-aberration-corrected electron diffraction. *Applied Physics Letters*, 93(18), 183103.
- [226] Morniroli, J. P., Houdellier, F., Roucau, C., Puiggali, J., Gestí, S., & Redjaïmia, A. (2008). LACDIF, a new electron diffraction technique obtained with the LACBED configuration and a C(s) corrector: comparison with electron precession. *Ultramicroscopy*, 108(2), 100-115.
- [227] Muller, D. A., Kourkoutis, L. F., Murfitt, M., Song, J. H., Hwang, H. Y., Silcox, J., Dellby, N., & Krivanek, O. L. (2008). Atomic-scale chemical imaging of composition and bonding by aberration-corrected microscopy. *Science*, 319(5866), 1073-1076.
- [228] Oh, S. H., Van Benthem, K., Molina, S. I., Borisevich, A. Y., Luo, W., Werner, P., Zakharov, N. D., Kumar, D., Pantelides, S. T., & Pennycook, S. J. (2008). Point defect configurations of supersaturated Au atoms inside Si nanowires. *Nano Letters*, 8(4), 1016-1019.
- [229] O'Keefe, M. A. (2008). Seeing atoms with aberration-corrected sub-ångstrom electron microscopy. *Ultramicroscopy*, 108(3), 196-209.
- [230] Peng, Y., Oxley, M. P., Lupini, A. R., Chisholm, M. F., & Pennycook, S. J. (2008). Spatial resolution and information transfer in scanning transmission electron microscopy. *Microscopy and Microanalysis*, 14, 36-47.

- [231] Pyrz, W. D., Blom, D. A., Shiju, N. R., Guliants, V. V., Vogt, T., & Buttrey, D. J. (2008). Using Aberration-corrected STEM Imaging to Explore Chemical and Structural Variations in the M1 Phase of the MoVNbTeO Oxidation Catalyst. *Microscopy and Microanalysis*, 14(2), 2-3.
- [232] Pyrz, W. D., Blom, D. A., Vogt, T., & Buttrey, D. J. (2008). Direct imaging of the MoVTeNbO M1 phase using an aberration-corrected high-resolution scanning transmission electron microscope. *Angewandte Chemie International Edition*, 47(15), 2788-2791.
- [233] Pyrz, W. D., & Buttrey, D. J. (2008). Particle Size Determination Using TEM: A Discussion of Image Acquisition and Analysis for the Novice Microscopist. *Langmuir*, 24, 11350-11360.
- [234] Robb, P. D., & Craven, A. J. (2008). Column ratio mapping: a processing technique for atomic resolution high-angle annular dark-field (HAADF) images. *Ultramicroscopy*, 109(1), 61-9.
- [235] Rossell, M., Erni, R., Tolley, A., Marquis, E., Radmilovic, V., & Dahmen, U. (2008). Atomic Structure of Core-Shell Precipitates in Al-Li-Sc-Zr Alloys Studied by Analytical and Aberration-Corrected TEM/STEM. *Microscopy and Microanalysis*, 14 (2008), 1348-1349.
- [236] Sawada, H., Sannomiya, T., Hosokawa, F., Nakamichi, T., Kaneyama, T., Tomita, T., Kondo, Y., Tanaka, T., Oshima, Y., Tanishiro, Y., & Takayanagi, K. (2008). Measurement method of aberration from Ronchigram by autocorrelation function. *Ultramicroscopy*, 108(11), 1467-1475.
- [237] Shah, A., May, S., Wen, J., Zhai, X., Eckstein, J., Bhattacharya, A., & Zuo, J. (2008). Probing Asymmetric Interfaces of LaMnO₃/SrMnO₃ Superlattices with Aberration-Corrected Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 14(2), 18-19.
- [238] Su, D. S., Jacob, T., Hansen, T. W., Wang, D., Schlögl, R., Freitag, B., & Kujawa, S. (2008). Surface chemistry of Ag particles: identification of oxide species by aberration-

corrected TEM and by DFT calculations. *Angewandte Chemie International Edition*, 47(27), 5005-5008.

- [239] Tanaka, N. (2008). Spherical Aberration-Corrected Transmission Electron Microscopy for Nanomaterials. In: *Advances in Imaging and Electron Physics*, vol. 153, pp. 385.
- [240] Van Benthem, K., Oxley, M. P., Kreyenschulte, C., & Pennycook, S. J. (2008). Quantitative Image Contrast Variations in STEM. *Microscopy and Microanalysis*, 14, 942-943.
- [241] Xin, H. L., Intaraprasong, V., & Muller, D. A. (2008). Depth sectioning of individual dopant atoms with aberration-corrected scanning transmission electron microscopy. *Applied Physics Letters*, 92(1), 013125.
- [242] Yang, G., Ramasse, Q., & Klie, R. (2008). Direct measurement of charge transfer in thermoelectric Ca₃Co₄O₉. *Physical Review B*, 78(15), 2-5.
- [243] Yang, G., Zhao, Y., Sader, K., Bleloch, A., & Klie, R. F. (2008). Atomic-resolution Studies of Ca₃Co₄O₉ using in-situ Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 14, 436-437.

2007

- [244] Abe, E. (2007). Where are the atoms in quasicrystals? Direct imaging by aberration-corrected STEM. *JEOL News*, 42E(1), 12-15.
- [245] Benami, A., Santana, G., Ortiz, A., Ponce, A., Romeu, D., Aguilar-Hernandez, J., Contreras-Puente, G., & Alonso, J. C. (2007). Strong white and blue photoluminescence from silicon nanocrystals in SiN_x grown by remote PECVD using SiCl₄/NH₃. *Nanotechnology*, 18(15), 155704.
- [246] Blom, D., Allard, L., Narula, C., & Moses, M. (2007). Aberration-Corrected STEM ex-situ Studies of Catalysts. *Microscopy and Microanalysis*, 13, 1192-1193.

- [247] Blom, D., Bradley, S., Sinkler, W., & Allard, L. (2007). Studies of Cluster Evolution During Reduction of Pt/Alumina Catalysts. *Microscopy and Microanalysis*, 13, 868–869.
- [248] Bosman, M., Keast, V. J., García-Muñoz, J. L., D'Alfonso, A. J., Findlay, S. D., & Allen, L. J. (2007). Two-dimensional mapping of chemical information at atomic resolution. *Physical Review Letters*, 99(8), 086102.
- [249] Browning, N., Arslan, I., Bradley, J., Chi, M., Dai, Z., Erni, R., Herrera, M., Okamoto, N. L., & Ramasse, Q. (2007). Aberration Corrected and Monochromated STEM/TEM for Materials Science. *Microscopy and Microanalysis*, 13, 1180–1181.
- [250] Chang, L., Cervera-Gontard, L., Hetherington, C., Kirkland, A., Ozkaya, D., & Dunin-Borkowski, R. (2007). Imaging active sites on platinum catalytic nanoparticles using aberration-corrected electron microscope. *Microscopy and Microanalysis*, 13(2), 866–867.
- [251] D'Alfonso, A. J., Findlay, S. D., Oxley, M. P., Pennycook, S. J., Van Benthem, K., & Allen, L. J. (2007). Depth sectioning in scanning transmission electron microscopy based on core-loss spectroscopy. *Ultramicroscopy* 108(1), 17–28.
- [252] Dillon, S. J., & Harmer, M. P. (2007). Direct observation of multilayer adsorption on alumina grain boundaries. *Journal of the American Ceramic Society*, 90(3), 996–998.
- [253] Dwyer, C., Kirkland, A. I., Hartel, P., Müller, H., & Haider, M. (2007). Electron nanodiffraction using sharply focused parallel probes. *Applied Physics Letters*, 90(15), 151104.
- [254] Evans, J., Hetherington, C., Kirkland, A., Stahlberg, H., & Browning, N. (2007). Cs-Corrected Cryo-Electron Microscopy for Biological Samples. *Microscopy and Microanalysis*, 13, 1164–1165.
- [255] Ferrer, D., Blom, D. A., Allard, L. F., Division, T., & Ridge, O. (2007). High resolution electron microscopy of bimetallic nanoparticles. *Microscopy and Microanalysis*, 13, 84–85.
- [256] Gontard, L. C., Chang, L.-Y., Hetherington, C. J. D., Kirkland, A. I., Ozkaya, D., & Dunin-Borkowski, R. E. (2007). Aberration-corrected imaging of active sites on

- industrial catalyst nanoparticles. *Angewandte Chemie International Edition*, 46(20), 3683–3685.
- [257] Dillon, S. J., & Harmer, M. P. (2007). Direct observation of multilayer adsorption on alumina grain boundaries. *Journal of the American Ceramic Society*, 90(3), 996–998.
- [258] Haigh, S., Kirkland, A., & Chang, L. (2007). Aberration Corrected Tilt Series Reconstruction. *Microscopy and Microanalysis*, 13, 768–769.
- [259] Hirata, A., Hirotsu, Y., Nieh, T. G., Ohkubo, T., & Tanaka, N. (2007). Direct imaging of local atomic ordering in a Pd-Ni-P bulk metallic glass using Cs-corrected transmission electron microscopy. *Ultramicroscopy*, 107(2-3), 116–123.
- [260] Hÿtch, M., & Houdellier, F. (2007). Mapping stress and strain in nanostructures by high-resolution transmission electron microscopy. *Microelectronic Engineering*, 84(3), 460–463.
- [261] Ikuhara, Y., Buban, J., Sato, Y., Shibata, N., & Yamamoto, T. (2007). STEM Characterization of Ceramic Grain Boundaries. *Microscopy and Microanalysis*, 13, 1172–1173.
- [262] Jiang, J., Yuan, J., & Bleloch, A. (2007). Cluster scale composition determination in a boron-rich compound. *Applied Physics Letters*, 91(11), 113107.
- [263] Johnson, C. L., Snoeck, E., & Hÿtch, M. J. (2007). Strain Distributions in Au Nanoparticles by Aberration-Corrected HREM. *Microscopy and Microanalysis*, 13, 1194–1195.
- [264] Kiely, C. J., Herzing, A. A., Watanabe, M., Enache, D. I., Edwards, J. K., Carley, A. F., & Hutchings, G. J. (2007). Aberration corrected analytical electron microscopy of supported bimetallic catalysts. *Microscopy and Microanalysis*, 13(2), 864–865.
- [265] Klie, R., Hammas, E., Zhao, Y., Yang, G., & Zhu, Y. (2007). Atomic-Scale Studies of Complex Oxide Interfaces Using Aberration-Corrected Z-contrast Imaging and EELS. *Microscopy and Microanalysis*, 13, 1178–1179.

- [266] Liu, F., Collazo, R., Mita, S., Duscher, G., & Pennycook, S. (2007). The mechanism for polarity inversion of GaN via a thin AlN layer: Direct experimental evidence. *Applied Physics Letters*, 91(2), 203115.
- [267] Liu, Z., Yanagi, K., Suenaga, K., Kataura, H., & Iijima, S. (2007). Imaging the dynamic behaviour of individual retinal chromophores confined inside carbon nanotubes. *Nature Nanotechnology*, 2(7), 422-425.
- [268] Lozano-Perez, S., & Titchmarsh, J. M. (2007). EFTEM assistant: A tool to understand the limitations of EFTEM. *Ultramicroscopy*, 107(4-5), 313-321.
- [269] Lupini, A. (2007). Aberration corrected imaging in the STEM, *Microscopy and Microanalysis*, 13(2), 4.
- [270] Mejia-Rosales, S. J., Fernandez-Navarro, C., Perez-Tijerina, E., Blom, D. A., Allard, L. F., & Jose-Yacaman, M. (2007). On the structure of Au/Pd bimetallic nanoparticles. *Journal of Physical Chemistry B*, 111(3), 1256-1260.
- [271] Neiner, D., Okamoto, N. L., Condrón, C. L., Ramasse, Q. M., Yu, P., Browning, N. D., & Kauzlarich, S. M. (2007). Hydrogen encapsulation in a silicon clathrate type I structure: Na_{5.5}(H₂)_{2.15}Si₄₆: synthesis and characterization. *Journal of the American Chemical Society*, 129(45), 13857-13862.
- [272] Nellist, P. D., Cosgriff, E. C., Behan, G., & Kirkland, A. I. (2007). Prospects for 3D characterization of materials by aberration-corrected STEM and SCEM. *Microscopy and Microanalysis*, 13, 130-131.
- [273] Nicolosi, V., Nellist, P. D., Sanvito, S., Cosgriff, E. C., Krishnamurthy, S., Blau, W. J., Green, M. L. H., Vengust, D., Dvorsek, D., Mihailovic, D., Compagnini, G., Sloan, J., Stolojan, V., Carey, J. D., Pennycook, S. J., & Coleman, J. N. (2007). Observation of van der Waals driven self-assembly of MoSI nanowires into a low-symmetry structure using aberration-corrected electron microscopy. *Advanced Materials*, 19(4), 543-547.
- [274] Oh, S. H., Benthem, K. Van, Molina, S. I., Werner, P., Kumar, D., & Pennycook, S. (2007). Characterization of Gold on Silicon Nanowires using Aberration-corrected STEM. *Microscopy and Microanalysis*, 13, 758-759.

- [275] Okamoto, N. L., Neiner, D., Ramasse, Q. M., Condon, C. L., Kauzlarich, S. M., & Browning, N. D. (2007). Characterization of Hydrogen-Encapsulated Type-I Silicon Clathrate. *Microscopy and Microanalysis*, 13, 1176–1177.
- [276] Oxley, M. P., Benthem, K. V., Peng, Y., Pennycook, S. J., & Ridge, O. (2007). Image contrast in high resolution aberration corrected scanning transmission electron microscopy. *Microscopy and Microanalysis*, 13, 906–907.
- [277] Pennycook, S., Lupini, A.R., van Benthem, K., Varela, M., Chisholm, M.F., Borisevich, A.Y., Contescu, C.I., Gallego, N.C., Pennycook, T.J., Peng, Y., & Oxley, M.P. (2007). New views of materials through aberration-corrected STEM. *Microscopy and Microanalysis*, 13(2), 1168–1169.
- [278] Petersen, T. C., & Keast, V. J. (2007). Astigmatic intensity equation for electron microscopy based phase retrieval. *Ultramicroscopy*, 107(8), 635–643.
- [279] Porter, A. E., Gass, M., Muller, K., Skepper, J. N., Midgley, P. A., & Welland, M. (2007). Direct imaging of single-walled carbon nanotubes in cells. *Nature Nanotechnology*, 2, 713–717.
- [280] Sato, Y., Suenaga, K., Okubo, S., Okazaki, T., & Iijima, S. (2007). Structures of D-5d-C-80 and I-h-Er₃N@C-80 fullerenes and their rotation inside carbon nanotubes demonstrated by aberration-corrected electron microscopy. *Nano Letters*, 7(12), 3704–3708.
- [281] Serin, V., Houdellier, F., Warot-Fonrose, B., Calmels, L., Stöger-Pollach, M., Hébert, C., Rubino, S., Schattschneider, P., Rusz, J., Novak, P., Hýtch, M. J., & Snoeck, E. (2007). State of the Art in Energy Loss Magnetic Chiral Dichroism (EMCD). *Microscopy and Microanalysis*, 13, 1286–1287.
- [282] Schlossmacher, P., Kuebel, C., Freitag, B., Hubert, D., & Perquin, R. (2007). New Developments in Focal-Series Reconstruction. *Microscopy and Microanalysis*, 13, 1170–1171.
- [283] Shannon, M. D., Lok, C. M., & Casci, J. L. (2007). Imaging promoter atoms in Fischer–Tropsch cobalt catalysts by aberration-corrected scanning transmission electron microscopy. *Journal of Catalysis*, 249(1), 41–51.

- [284] Tanaka, N. (2007). Effectiveness of Cs-corrected TEM/STEM for nano-materials research. *Microscopy and Microanalysis*, 13(2), 60-61.
- [285] Tanaka, T., Ando, M., Sano, K., Hosokawa, F., Kondo, Y., Yamamoto, N., & Takayanagi, K. (2007). Active-site imaging in catalyst of Au nanoparticle on rutile-TiO₂ by combination of aberration-corrected TEM and gas inlet TEM holder. *Microscopy and Microanalysis*, 13(2), 1204-1205.
- [286] Watanabe, M., Hojo, H., Ackland, D., Kiely, C., & Williams, D. (2007). Applications of Aberration-Corrected Scanning Transmission Electron Microscopy for Atomic-Scale Characterization. *Microscopy and Microanalysis*, 13, 1198-1199.
- [287] Yaney, D. L. (2007). Characterization of Magnetic Recording Devices Using a JEOL 2200FS Aberration-Corrected STEM/TEM. *Microscopy and Microanalysis*, 13, 88-89.
- [288] Yu, W., Houben, L., Tillmann, K., & Mader, W. (2007). Phase Contrast and HAADF Imaging of Structures in In₂O₃-ZnO Compounds in CS-Corrected Electron Microscopes. *Microscopy and Microanalysis*, 13, 28-29.
- [289] Zhao, D., Aoki, T., Koley, G., & Cai, Z. (2007). Performance Characteristics of an aberration-corrected Jeol JEM 2100F STEM/TEM at the University of South Carolina. *Microscopy and Microanalysis*, 13(2), 1166-1167.

2006

- [290] Arslan, I., & Browning, N. D. (2006). Atomic scale defect analysis in the scanning transmission electron microscope. *Microscopy Research and Technique*, 69(5), 330-342.
- [291] Blom, D. A., Allard, L. E., Mishina, S., & O'Keefe, M. A. (2006). Early results from an aberration-corrected JEOL 2200FS STEM/TEM at Oak Ridge National Laboratory. *Microscopy and Microanalysis*, 12(6), 483-491.

- [292] Borisevich, A. Y., Lupini, A. R., & Pennycook, S. J. (2006). Depth sectioning with the aberration-corrected scanning transmission electron microscope. *Proceedings of the National Academy of Sciences of the United States of America*, 103(9), 3044-3048.
- [293] Browning, N. D., Arslan, I., Erni, R., Idrobo, J. C., Ziegler, A., Bradley, J., Dai, Z., Stach, E. A., & Bleloch, A. (2006). Monochromators and aberration correctors: Taking EELS to new levels of energy and spatial resolution. *Journal of Physics Conference Series*, 26, 59-64.
- [294] Erni, R., Freitag, B., Hartel, P., Müller, H., Tiemeijer, P., Van Der Stam, M., Stekelenburg, M., Hubert, D., Specht, P., & Garibay-Febles, V. (2006). Atomic scale analysis of planar defects in polycrystalline diamond. *Microscopy and Microanalysis*, 12(6), 492-497.
- [295] Erni, R., Tiemeijer, P., Kujawa, S., Stam, M. Van Der, Stekelenburg, M., & Freitag, B. (2006). A new era of analysis with spherical-aberration corrected STEM - Atomic and electronic information approaching the single atom level. *Microscopy and Microanalysis*, 12, 1372-1373.
- [296] Gontard, L. C., Chang, L.-Y., Dunin-Borkowski, R. E., Kirkland, A. I., Hetherington, C. J. D., & Ozkaya, D. (2006). The application of spherical aberration correction and focal series restoration to high-resolution images of platinum nanocatalyst particles. *Journal of Physics Conference Series*, 26, 25-28.
- [297] Gontard, L. C., Dunin-Borkowski, R. E., Hÿtch, M. J., & Ozkaya, D. (2006). Delocalisation in images of Pt nanoparticles. *Journal of Physics Conference Series*, 26, 292-295.
- [298] Hetherington, C., Kirkland, A., Doole, R., Cockayne, D., Titchmarsh, J., & Hutchison, J. (2006). High Resolution Imaging Using the Oxford Aberration Corrected TEM. *Microscopy and Microanalysis*, 12, 1454-1455.
- [299] Hirahara, K., Saitoh, K., Yamasaki, J., & Tanaka, N. (2006). Direct observation of six-membered rings in the upper and lower walls of a single-wall carbon nanotube by spherical aberration-corrected HRTEM. *Nano Letters*, 6(8), 1778-1783.

- [300] Houben, L., Thust, A., & Urban, K. (2006). Atomic-precision determination of the reconstruction of a 90 degree tilt boundary in YBa₂Cu₃O_{7-δ} by aberration corrected HRTEM. *Ultramicroscopy*, 106(3), 200-214.
- [301] Jia, C. L., Houben, L., & Urban, K. (2006). Atom vacancies at a screw dislocation core in SrTiO₃. *Philosophical Magazine Letters*, 86(11), 683-690.
- [302] José-Yacamán, M., Mejía-Rosales, S., Pérez-Tijerina, E., Blom, D., & Allard, L. (2006). Imaging Au-Pd Nanoparticles with the Aberration-Corrected STEM/TEM. *Microscopy and Microanalysis*, 12, 772-773.
- [303] Kirkland, A. I., Meyer, R. R., & Chang, L.-Y. S. (2006). Local measurement and computational refinement of aberrations for HRTEM. *Microscopy and Microanalysis*. 12(6), 461-468.
- [304] Lentzen, M. (2006). Progress in aberration-corrected high-resolution transmission electron microscopy using hardware aberration correction. *Microscopy and Microanalysis*, 12(3), 191-205.
- [305] Maurice, J. L., Carrétéro, C., Casanove, M. J., Bouzehouane, K., Guyard, S., Larquet, E., & Contour, J. P. (2006). Electronic conductivity and structural distortion at the interface between insulators SrTiO₃ and LaAlO₃. *Physica Status Solidi A*, 203(9), 2209-2214.
- [306] McBride, J., Treadway, J., Feldman, L. C., Pennycook, S. J., & Rosenthal, S. J. (2006). Structural basis for near unity quantum yield core/shell nanostructures. *Nano Letters*, 6(7), 1496-1501.
- [307] Mitsuishi, K., Takeguchi, M., Kondo, Y., Hosokawa, F., Okamoto, K., Sannomiya, T., Hori, M., Iwama, T., Kawazoe, M., & Furuya, K. (2006). Ultrahigh-vacuum third-order spherical aberration (Cs) corrector for a scanning transmission electron microscope. *Microscopy and Microanalysis*, 12(6), 456-460.
- [308] Mkhoyan, K. A., Batson, P. E., Cha, J., Schaff, W. J., & Silcox, J. (2006). Direct determination of local lattice polarity in crystals. *Science*, 312(5778), 1354.

- [309] Nellist, P. D., Chisholm, M. F., Lupini, A. R., Borisevich, A., Sides, W. H., Pennycook, S. J., Dellby, N., Keyse, R., Krivanek, O. L., Murfitt, M. F., & Szilagy, Z. S. (2006). Aberration-corrected STEM: current performance and future directions. *Journal of Physics Conference Series*, 26, 7-12.
- [310] Nicolosi, V., Nellist, P., Sloan, J., Mhailovic, D., Green, M., Blau, W. J., & Coleman, J. N. (2006). Mo₆S_{4.5}I_{4.5} nanowires: Structure studies by HRTEM and aberration corrected STEM. *Journal of Physics Conference Series*, 26, 260-263.
- [311] Peng, Y., Oxley, M., Lupini, A., Chisholm, M., & Pennycook, S. (2006). Ultimate Resolution Limit for Z-contrast STEM: Atoms are Smaller in ADF. *Microscopy and Microanalysis*, 12, 1340-1341.
- [312] Pennycook, S. J., Varela, M., Hetherington, C. J. D., & Kirkland, A. I. (2006). Materials advances through aberration-corrected electron microscopy. *MRS Bulletin*, 31, 36-43.
- [313] Ramasse, Q., Bleloch, A., Klie, R., & Browning, N. (2006). Advanced tuning algorithm for crystalline materials in scanning transmission electron microscopy. *Microscopy and Microanalysis*, 12, 1342-1343.
- [314] Sanchez, A. M., Galindo, P. L., Kret, S., Falke, M., Beanland, R., & Goodhew, P. J. (2006). Quantitative strain mapping applied to aberration-corrected HAADF images. *Microscopy and Microanalysis*, 12(4), 285-294.
- [315] Tanaka, N., Yamasaki, J., Hirahara, K., Yoshida, K., & Saitoh, K. (2006). Present Status of Cs-corrected HRTEM and Future Prospects. *Microscopy and Microanalysis*, 12, 158-159.
- [316] Tang, C. Y., Chen, J. H., Zandbergen, H. W., & Li, F. H. (2006). Image deconvolution in spherical aberration-corrected high-resolution transmission electron microscopy. *Ultramicroscopy*, 106(6), 539-546.
- [317] Tillmann, K., Houben, L., & Thust, A. (2006). Atomic-resolution imaging of lattice imperfections in semiconductors by combined aberration-corrected HRTEM and exit-plane wavefunction retrieval. *Philosophical Magazine*, 86(29-31), 4589-4606.

- [318] Van Benthem, K., Lupini, A. R., Oxley, M. P., Findlay, S. D., Allen, L. J., & Pennycook, S. J. (2006). Three-dimensional ADF imaging of individual atoms by through-focal series scanning transmission electron microscopy. *Ultramicroscopy*, 106(11-12), 1062-1068.
- [319] Van der Stam, M. A., Freitag, B., Erni, R., Tiemeijer, P., Stekelenburg, M., Hubert, D., & Ringnalda, J. (2006). Design advances and new results of a sub-ångstrom dedicated corrector S/TEM. *Microscopy and Microanalysis*, 12, 1370–1371.
- [320] Varela, M., Pennycook, T. J., Tian, W., Mandrus, D., Pennycook, S. J., Peña, V., Sefrioui, Z., & Santamaria, J. (2006). Atomic scale characterization of complex oxide interfaces. *Journal of Materials Science*, 41(14), 4389-4393.
- [321] Voyles, P. M. (2006). Imaging single atoms with Z-contrast scanning transmission electron microscopy in two and three dimensions. *Microchimica Acta*, 155(1-2), 5-10.
- [322] Walther, T., Quandt, E., Stegmann, H., Thesen, A., & Benner, G. (2006). First experimental test of a new monochromated and aberration-corrected 200 kV field-emission scanning transmission electron microscope. *Ultramicroscopy*, 106(11-12), 963-969.
- [323] Walther, T., & Stegmann, H. (2006). Preliminary results from the first monochromated and aberration corrected 200-kV field-emission scanning transmission electron microscope. *Microscopy and Microanalysis*, 12, 498–505.
- [324] Ward, E. P. W., Arslan, I., Bleloch, A., Thomas, J. M., & Midgley, P. A. (2006). Nano-metrology of platinum-ruthenium bimetallic catalysts and the cluster-to-crystal transformation. *Journal of Physics: Conference Series*, 26, 207–210.
- [325] Watanabe, M., Saxey, D., Zheng, R., Williams, D., & Ringer, S. (2006). Characterization of Ni-base Superalloys on the Atomic Scale by Atom Probe Tomography and Spherical-Aberration Corrected Analytical Electron Microscopy Techniques. *Microscopy and Microanalysis*, 12, 534–535.
- [326] Watanabe, M., Ackland, D. W., Burrows, A., Kiely, C. J., Williams, D. B., Krivanek, O. L., Dellby, N., Murfitt, M. F., & Szilagy, Z. (2006). Improvements in the X-ray

analytical capabilities of a scanning transmission electron microscope by spherical-aberration correction. *Microscopy and Microanalysis*, 12(6), 515.

- [327] Williams, D., & Watanabe, M. (2006). Atomic-Scale Characterization of Metals and Alloys Using Spherical-Aberration Corrected Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 12, 1344–1345.
- [328] Yamazaki, T., Kotaka, Y., Kikuchi, Y., & Watanabe, K. (2006). Precise measurement of third-order spherical aberration using low-order zone-axis Ronchigrams. *Ultramicroscopy*, 106(3), 153–163.
- [329] Yoshida, K., Kawai, T., Nambara, T., Tanemura, S., Saitoh, K., & Tanaka, N., Direct observation of oxygen atoms in rutile titanium dioxide by spherical aberration corrected high-resolution transmission electron microscopy. *Nanotechnology*, 17(15), 3944-3950.

2005

- [330] Abe, E., & Pennycook, S. J. (2005). Direct Imaging of Point Defects in a Quasicrystal by Cs-Corrected Ultrahigh-Resolution 300kV-STEM. *Microscopy and Microanalysis*, 11, 550–551.
- [331] Bacon, N. J., Corbin, G. J., Dellby, N., Hrnčirik, P., Krivanek, O. L., McManama-Smith, A., Murfitt, M. F., & Szilagy, Z. S. (2005). Nion UltraSTEM: An aberration-corrected STEM for imaging and analysis. *Microscopy and Microanalysis*, 11(2), 1422.
- [332] Batson, P. E. (2005). Atomic motion observed with the IBM sub-ångstrom STEM. *Microscopy and Microanalysis*, 11, 2124–2125.
- [333] Blom, D. a, Allard, L. F., O’Keefe, M. a, & Mishina, S. (2005). High resolution imaging with an aberration corrected JEOL 2200FS-AC STEM/TEM. *Microscopy and Microanalysis*, 11, 548–549.
- [334] Freitag, B., Kujawa, S., Mul, P. M., Ringnald, J., & Tiemeijer, P. C. (2005). Breaking the spherical and chromatic aberration barrier in transmission electron microscopy. *Ultramicroscopy*, 102(3), 209-214.

- [335] Giannuzzi, L. a, Geurts, R., & Ringnalda, J. (2005). 2 keV Ga+ FIB Milling for Reducing Amorphous Damage in Silicon. *Microscopy and Microanalysis*, 11, 828–829.
- [336] Hutchison, J. L., Titchmarsh, J. M., Cockayne, D. J. H., Doole, R. C., Hetherington, C. J. D., Kirkland, A. I., & Sawada, H. (2005). A versatile double aberration-corrected, energy filtered HREM/STEM for materials science. *Ultramicroscopy*, 103(1), 7-15.
- [337] Hanrath, T., Lee, D. C., Korgel, B. a, & Diebold, A. (2005). TEM and MultiSlice Simulation Investigation of Si and Ge Nanowires. *Microscopy and Microanalysis*, 11, 1918–1919.
- [338] Kotaka, Y., Yamazaki, T., Watanabe, K., Kikuchi, Y., Nakanishi, N., & Hashimoto, I. (2005). Measurement of 3rd Order Spherical Aberration Coefficient for Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, 11, 2166–2167.
- [339] Krivanek, O. L., Dellby, N., McManama-Smith, A., Murfitt, M., Nellist, P. D., & Own, C. S. (2005). An Aberration-Corrected STEM for Diffraction Studies. *Microscopy and Microanalysis*, 11, 544–545.
- [340] O'Keefe, M. A., Allard, L. F., & Blom, D. A. (2005). HRTEM imaging of atoms at sub-ångstrom resolution. *Journal of Electron Microscopy*, 54(3), 169-180.
- [341] Lupini, A. R., Veith, G. M., Dudney, N. J., Chisholm, M. F., Van Benthem, K., Varela, M., Borisevich, A. Y., Peng, Y., Rashkeev, S., & Pennycook, S. J. (2005). Imaging of Materials through Aberration Corrected STEM. *Microscopy and Microanalysis*, 11, 2116-2117.
- [342] Pan, Y., Brown, A., Brydson, R., Warley, A., Li, A., Powell, J., Bleloch, A., Falke, U., & Falke, M. (2005). TEM and STEM Studies of the Atomic Structure and Chemistry of Ferritin in Human Liver Biopsies. *Microscopy and Microanalysis*, 11, 1102–1103.
- [343] Plitzko, J. M., Freitag, B., Hegerl, R., & Luecken, U. (2005). Aberration Free Microscopy for Life Science Applications. *Microscopy and Microanalysis*, 11, 2140–2141.
- [344] Ramasse, Q. M., & Bleloch, A. L. (2005). Diagnosis of aberrations from crystalline samples in scanning transmission electron microscopy. *Ultramicroscopy*, 106(1), 37-56.

- [345] Sawada, H., Tomita, T., Naruse, M., Honda, T., Hambridge, P., Hartel, P., Haider, M., Hetherington, C., Doole, R., Kirkland, A. I., Hutchison, J. L., Titchmarsh, J., & Cockayne, D. (2005). Experimental evaluation of a spherical aberration corrected TEM and STEM. *Journal of Electron Microscopy*, 54(2), 119-121.
- [346] Su, D. S., Schlöegl, R., Kujawa, S., & Freitag, B. (2005). Interface study of silver nano-particles using an image Cs-corrected TEM. *Microscopy and Microanalysis*, 11, 1550-1551.
- [347] Thesen, A. E., Matijevic, M., & Benner, G. (2005). Design Features and Ultimate Performance of an Ultra-High Resolution Aberration-Corrected, Monochromatized 200 keV FEG-TEM. *Microscopy and Microanalysis*, 11, 2144-2145.
- [348] Tillmann, K., Thust, A., Gerber, A., Weides, M. P., & Urban, K. (2005). Atomic structure of Beta-tantalum nanocrystallites. *Microscopy and Microanalysis*, 11(6), 534-544.
- [349] Van Benthem, K., Lupini, A. R., Kim, M., Baik, H. S., Doh, S., Lee, J.-H., Oxley, M. P., Findlay, S. D., Allen, L. J., Luck, J. T., & Pennycook, S. J. (2005). Three-dimensional imaging of individual hafnium atoms inside a semiconductor device. *Applied Physics Letters*, 87(3), 034104.
- [350] Van Benthem, K., Lupini, A. R., Peng, Y., & Pennycook, S. J. (2005). Tomographic Imaging with Single Atom Sensitivity Using Aberration-Corrected STEM. *Microscopy and Microanalysis*, 11, 318-319.
- [351] Varela, M., Lupini, A. R., Benthem, K. V., Borisevich, A. Y., Chisholm, M. F., Shibata, N., Abe, E., & Pennycook, S. J. (2005). Materials characterization in the aberration-corrected scanning transmission electron microscope, *Annual Review of Materials Research*, 35(1), 539-569.
- [352] Van der Stam, M. A., Tiemeijer, P., Freitag, B., Stekelenburg, M., & Ringnalda, J. (2005). The Design and First Results of a Dedicated Corrector (S)TEM. *Microscopy and Microanalysis*, 11, 2148-2149.
- [353] Varela, M., Peña, V., Sefrioui, Z., Tian, W., Lupini, a R., Mandrus, D. G., Santamaria, J., & Pennycook, S. J. (2005). Atomic Scale Studies of the Electronic Properties of CMR Manganese Oxides. *Microscopy and Microanalysis*, 11, 1432-1433.

- [354] Ward, E. P. W., Arslan, I., Midgley, P. A., Bleloch, A., and Thomas, J. M. (2005). Direct visualisation, by aberration-corrected electron microscopy, of the crystallisation of bimetallic nanoparticle catalysts. *Chemical Communications*, 46, 5805-5807.
- [355] Watanabe, M., Ackland, D. W., Burrows, A., Kiely, C. J., Williams, D. B., Kanno, M., & Hynes, R. (2005). Advantages of Cs-correctors for Spectrometry in STEM. *Microscopy and Microanalysis*, 11, 2132-2133.
- [356] Yamasaki, J., Sawada, H., & Tanaka, N. (2005). First experiments of selected area nano-diffraction from semiconductor interfaces using a spherical aberration corrected TEM. *Journal of Electron Microscopy*, 54(2), 123-126.
- [357] Zaluzec, N. J., & Hiller, J. (2005). Comparison of SCEM and STEM-HAADF Imaging in Thick Specimens. *Microscopy and Microanalysis*, 11, 714-715.

2004

- [358] Chen, J. H., Zandbergen, H. W., & Dyck, D. Van. (2004). Atomic imaging in aberration-corrected high-resolution transmission electron microscopy. *Ultramicroscopy*, 98(2-4), 81-97.
- [359] Deneen, J. M., Lentzen, M., & Carter, C. B. (2004). Investigation of ZnS Nanobelts by Spherical-aberration Corrected Transmission Electron Microscopy. *Microscopy and Microanalysis*, 10, 54-55.
- [360] Falke, U., Bleloch, A., Falke, M., & Teichert, S. (2004). Atomic structure of a (2 x 1) reconstructed NiSi₂/Si(001) interface. *Physical Review Letters*, 92(11), 116103.
- [361] Freitag, B., Kujawa, S., Mul, P. M., Tiemeijer, P. C., & Snoeck, E. (2004). First Experimental Proof of Spatial Resolution Improvement in a Monochromized and Cs-Corrected TEM. *Microscopy and Microanalysis*, 10, 978-979.
- [362] Jia, C. L., & Urban, K. (2004). Atomic-resolution measurement of oxygen concentration in oxide materials. *Science*, 303(5666), 2001-2004.

- [363] Jia, C.-L., Lentzen, M., & Urban, K. (2004). High-resolution transmission electron microscopy using negative spherical aberration. *Microscopy and Microanalysis*, 10(2), 174-184.
- [364] Lentzen, M. (2004). The tuning of a Zernike phase plate with defocus and variable spherical aberration and its use in HRTEM imaging. *Ultramicroscopy*, 99(4), 211-220.
- [365] Lupini, A. R., Franceschetti, A. G., Pantelides, S. T., Dai, S., Chen, B., Yan, W., Overbury, S. H., & Pennycook, S. J. (2004). Aberration Corrected STEM Analysis of Gold Nanoparticle Catalytic Activity. *Microscopy and Microanalysis*, 10, 462-463.
- [366] McBride, J. R., Kippeny, T. C., Pennycook, S. J., & Rosenthal, S. J. (2004). Aberration-corrected Z-contrast scanning transmission electron microscopy of CdSe nanocrystals. *Nano Letters*, 4(7), 1279-1283.
- [367] Nellist, P. D., Chisholm, M. F., Dellby, N., Krivanek, O. L., Murfitt, M. F., Szilagyi, Z. S., Lupini, A. R., Borisevich, A., Sides, W. H., & Pennycook, S. J. (2004). Direct sub-ångstrom imaging of a crystal lattice. *Science*, 305(5691), 1741.
- [368] Perrey, C. R., Thompson, S., Lentzen, M., Kortshagen, U., & Carter, C. B. (2004). Observation of Si nanocrystals in a/nc-Si:H films by spherical-aberration corrected transmission electron microscopy. *Journal of Non-Crystalline Solids*, 343(1-3), 78-84.
- [369] Shibata, N., Pennycook, S. J., Gosnell, T. R., Painter, G. S., Shelton, W. A., & Becher, P. F. (2004). Observation of rare-earth segregation in silicon nitride ceramics at subnanometre dimensions. *Nature*, 428(6984), 730-733.
- [370] Tanaka, N., Yamasaki, J., Fuchi, S., & Takeda, Y. (2004). First observation of In(x)Ga(1-x)As quantum dots in GaP by spherical-aberration-corrected HRTEM in comparison with ADF-STEM and conventional HRTEM. *Microscopy and Microanalysis*, 10(1), 139-145.
- [371] Tanaka, N., Yamasaki, J., Kawai, T., & Pan, H. (2004). The first observation of carbon nanotubes by spherical aberration corrected high-resolution transmission electron microscopy. *Nanotechnology*, 15, 1779.

- [372] Tillmann, K., Thust, A., & Urban, K. (2004). Spherical aberration correction in tandem with exit-plane wave function reconstruction: interlocking tools for the atomic scale imaging of lattice defects in GaAs. *Microscopy and Microanalysis*, 10(2), 185-198.
- [373] Varela, M., Findlay, S. D., Lupini, A. R., Christen, H. M., Borisevich, A. Y., Dellby, N., Krivanek, O. L., Nellist, P. D., Oxley, M. P., Allen, L. J., & Pennycook, S. J. (2004). Spectroscopic imaging of single atoms within a bulk solid. *Physical Review Letters*, 92(9), 4.
- [374] Wang, S., Borisevich, A. Y., Rashkeev, S. N., Glazoff, M. V., Sohlberg, K., Pennycook, S. J., & Pantelides, S. T. (2004). Dopants adsorbed as single atoms prevent degradation of catalysts. *Nature Materials*, 3, 143-146.
- [375] Xu, H., Twisten, R. D., Menard, L. D., Frenkel, A., Nuzzo, R., Johnson, D., & Yang, J. C. (2004). Outlook of application of aberration corrected-electron microscopy in the ligandprotected metal clusters. *Microscopy and Microanalysis*, 10(3), 62-63.
- [376] Yamasaki, J., Kawai, T., & Tanaka, N. (2004). Direct observation of a stacking fault in Si(1-x)Ge(x) semiconductors by spherical aberration-corrected TEM and conventional ADF-STEM. *Journal of Electron Microscopy*, 53(2), 129-135.
- [377] Zaluzec, N. J. (2004). SCEM and XEDS in the Next Generation Aberration Corrected Microscopes. *Microscopy and Microanalysis*, 10, 34-35.

2003

- [378] Allen, L., Findlay, S. D., Lupini, A., Oxley, M., & Pennycook, S. J. (2003). Atomic-resolution electron energy loss spectroscopy imaging in aberration corrected scanning transmission electron microscopy. *Physical Review Letters*, 91(10), 1-4.
- [379] Batson, P. E. (2003). Aberration correction results in the IBM STEM instrument. *Ultramicroscopy*, 96(3-4), 239-249.

- [380] Diebold, A. C., Foran, B., Kisielowski, C., Muller, D. A., Pennycook, S. J., & Principe, E. (2003). Thin Dielectric Film Thickness Determination by Advanced Transmission Electron Microscopy. *Microscopy and Microanalysis*, 9, 493–508.
- [381] Hosokawa, F., Tomita, T., Naruse, M., Honda, T., Hartel, P., & Haider, M. (2003). A spherical aberration-corrected 200 kV TEM. *Journal of Electron Microscopy*, 52(1), 3–10.
- [382] Jia, C. L., Lentzen, M., & Urban, K. (2003). Atomic-resolution imaging of oxygen in perovskite ceramics. *Science*, 299(5608), 870–873.
- [383] Lopatin, S., Duscher, G., & Windl, W. (2003). Atomic Resolution Z-contrast Imaging and EELS: Application for Ge / SiO₂ Interface. *Microscopy and Microanalysis*, 9, 818–819.
- [384] Lupini, A. R., & Pennycook, S. J. (2003). Localization in elastic and inelastic scattering. *Ultramicroscopy*, 96(2-4), 313–322.
- [385] Pennycook, S. J., Lupini, A. R., Borisevich, A., Varela, M., Peng, Y., Duscher, G., Buczko, R., & Pantelides, S. T., Transmission electron microscopy: Overview and challenges. *Materials Science*, 683, 1–7.
- [386] Pennycook, S. J., Lupini, A. R., Kadavanich, A., McBride, J. R., Rosenthal, S. J., Puetter, R. C., Yahil, A., Krivanek, O. L., Dellby, N., Nellist, P. D. L., Duscher, G., Wang, L. G., & Pantelides, S. T. (2003). Aberration-corrected scanning transmission electron microscopy: the potential for nano- and interface science. *Z. Metallkunde*, 94(4), 350–357.
- [387] Perrey, C. R., Carter, C. B., & Lentzen, M. (2003). Application of Variable Cs HRTEM to the Study of Nanoscale Structures. *Microscopy and Microanalysis*, 9, 958–959.
- [388] Tanaka, N., Yamasaki, J., Usuda, K., & Ikarashi, N. (2003). First observation of SiO₂/Si(100) interfaces by spherical aberration-corrected high-resolution transmission electron microscopy. *Journal of Electron Microscopy*, 52(1), 69–73.

- [389] Tanaka, N., Yamasaki, J., Sawada, H., & Naruse, M. (2003). New Possibility of Direct Observations of Quantum Dots, Nanotubes and Interfaces by Cs-Corrected HRTEM. *Microscopy and Microanalysis*, 9, 138–139.
- [390] Thust, A., Jia, C. L., & Urban, K. (2003). Direct Determination of Imaging Parameters from Wave Functions in HRTEM. *Microscopy and Microanalysis*, 9, 140–141.
- [391] Yu, Z., Batson, P. E., & Silcox, J. (2003). Artifacts in aberration-corrected ADF-STEM imaging. *Ultramicroscopy*, 96(3-4), 275-284.

2002

- [392] Batson, P. E., Dellby, N., & Krivanek, O. L. (2002). Sub-ångstrom resolution using aberration corrected electron optics. *Nature*, 418(6898), 617-620.
- [393] Bleloch, A., Brown, L. M., Brydson, R., Craven, A., Goodhew, P., & Keily, C. (2002). The superSTEM: An Aberration Corrected Analytical Microscopy Facility. *Microscopy and Microanalysis*, 8, 470–471.
- [394] Browning, N. D., Sun, K., Klie, R. F., Liu, J., Disko, M. M., Nellist, P. D., & Dellby, N. (2002). Enhancing the Resolution and Sensitivity of STEM by Aberration Correction. *Microscopy and Microanalysis*, 8, 22–23.
- [395] Chen, J. H., Urban, K., Kabius, B., Lentzen, M., Jansen, J., & Zandbergen, H. W. (2002). Atomic imaging in aberration-corrected HRTEM with application to Al alloys. *Microscopy and Microanalysis*, 8, 468–469.
- [396] Jinschek, J. R., Kisielowski, C., Lentzen, M., & Urban, K. (2002). Quantification of the Resolved Phase Change in Reconstructed Electron Exit Waves of Gold [110] in Different Electron Microscopes. *Microscopy and Microanalysis*, 8, 466–467.

- [397] Kabius, B., Haider, M., Uhlemann, S., Schwan, E., Urban, K. W., & Rose, H. H. (2002). First application of a spherical-aberration corrected transmission electron microscope in materials science. *Journal of Electron Microscopy*, 51(1), S51-S58.
- [398] Krivanek, O. L., Dellby, N., Murfitt, M., Nellist, P. D., & Szilagy, Z. (2002). STEM Aberration Correction: Where Next? *Microscopy and Microanalysis*, 8, 20-21.
- [399] Lentzen, M., Jahnen, B., Jia, C. L., Thust, A., Tillmann, K., & Urban, K. (2002). High-resolution imaging with an aberration-corrected transmission electron microscope. *Ultramicroscopy*, 92(3-4), 233-242.
- [400] Lupini, A., Pennycook, S., Krivanek, O., Dellby, N., & Nellist, P. (2002). Initial results from aberration correction in STEM. *Microscopy and Microanalysis*, 8(2), 476-477.
- [401] Meyer, R. R., Kirkland, A. I., & Saxton, W. O. (2002). A new method for the determination of the wave aberration function for high resolution TEM. 1. Measurement of the symmetric aberrations. *Ultramicroscopy*, 92(2), 89-109.
- [402] Urban, K., & Lentzen, M. (2002). Application of Aberration-Corrected Transmission Electron Microscopy to Materials Science. *Microscopy and Microanalysis*, 8, 8-9.

2001

- [403] Dellby, N., Krivanek, O. L., Nellist, P. D., Batson, P. E., & Lupini, A. R. (2001). Progress in aberration-corrected scanning transmission electron microscopy. *Journal of Electron Microscopy*, 60(3), 177-185.
- [404] Ishizuka, K. (2001). Prospects of atomic resolution imaging with an aberration-corrected STEM. *Journal of Electron Microscopy*, 50(4), 291-305.

2000

- [405] Pennycook, S. J., Rafferty, B., & Nellist, P. (2000). Z-contrast imaging in an aberration-corrected scanning transmission electron microscope. *Microscopy and Microanalysis*, 6(4), 343-352.

1999

- [406] Krivanek, O. L., Dellby, N., & Lupini, A. R. (1999). Towards sub-Å electron beams. *Ultramicroscopy*, 78(1-4), 1-11.
- [407] Urban, K., Kabius, B., Haider, M., Rose, H., Gmbh, F. J., Jilich, D., & Gmbh, C. (1999). A way to higher resolution : spherical-aberration correction in a 200 kV transmission electron microscope. *Journal of Electron Microscopy*, 48(6), 821-826.

1998

- [408] Haider, M., Uhlemann, S., Schwan, E., Rose, H., Kabius, B., & Urban, K. W. (1998). Electron microscopy image enhanced. *Nature*, 392, 768-769.
- [409] Haider, M. (1998). A spherical-aberration-corrected 200kV transmission electron microscope. *Ultramicroscopy*, 75(1), 53-60.

1997

- [410] Krivanek, O. L., Dellby, N., Spence, A. J., Camps, R. A., & Brown, L. M. (1997). Aberration correction in the STEM. *Journal of Physics Conference Series*, 153(2), 35-40.

[411] Haider, M., & Uhlemann, S. (1997). Seeing is not always believing: reduction of artefacts by an improved point resolution with a spherical aberration corrected 200 kV transmission electron microscope. *Microscopy and Microanalysis*, 3, 1179–1180.