



## Friedrich Prinz

Finmeccanica Professor and Senior Fellow at the Precourt Institute for Energy  
Mechanical Engineering

### CONTACT INFORMATION

- **Alternate Contact**

Anne Blenman Hare - NPL Program Administrator

**Email** abhare@stanford.edu

**Tel** 650-497-0411

### Bio

---

#### BIO

Fritz Prinz is the Finmeccanica Professor in the School of Engineering at Stanford University, Professor of Materials Science and Engineering, Professor of Mechanical Engineering and Senior Fellow at the Precourt Institute for Energy. He also serves as the Director of the Nanoscale Prototyping Laboratory at Stanford. A solid-state physicist by training, Prinz leads a group of doctoral students who are addressing fundamental issues on energy conversion and storage at the nanoscale. In his Laboratory, prototype fuel cells, solar cells and batteries are used to test new concepts and novel material structures using atomic layer deposition, scanning tunneling microscopy and other technologies. Prinz is also interested in learning from nature, particularly understanding the electron transport chain in plant cells. The Prinz group, in collaboration with biologist Arthur Grossman, were the first to extract electrons directly from plant cells subjected to light stimulus. Before coming to Stanford in 1994, he was on the faculty at Carnegie Mellon University. Prinz earned a PhD in physics at the University of Vienna in Austria.

#### ACADEMIC APPOINTMENTS

- Professor, Mechanical Engineering
- Professor, Materials Science and Engineering
- Senior Fellow, Precourt Institute for Energy
- Affiliate, Stanford Woods Institute for the Environment

#### HONORS AND AWARDS

- Sir Christopher Hinton Lecture, Royal Academy of Engineering (1991)
- Engineer of the Year, American Society of Mechanical Engineers, Pittsburgh, PA Section (1991 - 1992)
- Corresponding member, Austrian Academy of Science, Vienna, Austria (1996)
- Award for Excellence, Literati Club (2002)
- Most Outstanding Paper in the 2001 volume, Rapid Prototyping Journal (2002)
- The AM Strickland Prize for Best Paper in 2005, The Institution of Mechanical Engineers, London, UK (2005)
- Tedori-Callinan Lecture, University of Pennsylvania (2006)
- Fellow, American Association for the Advancement of Science (AAAS) (2007)

- Woodruff Colloquium in the Theme of Energy, Georgia Institute of Technology, Atlanta, GA (2008)
- Munushian Lecture, University of Southern California (2009)

## PROFESSIONAL EDUCATION

- PhD, University of Vienna , Physics (1975)

## Teaching

---

### COURSES

#### 2017-18

- Additive Manufacturing- From Fundamentals to Applications: ME 232 (Sum)
- Mechanical Engineering Design: ME 113 (Spr)

#### 2016-17

- Additive Manufacturing- From Fundamentals to Applications: ME 232 (Sum)
- Mechanical Engineering Design: ME 113 (Spr)

#### 2015-16

- Fuel Cell Science and Technology: ME 260 (Spr)

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Hyun Soo Han, Soonwook Hong, Simin Nie, Woosung Park, Shicheng Xu

#### Postdoctoral Research Mentor

Georgi Diankov

## Publications

---

### PUBLICATIONS

- **Implications of Electricity Liberalization for Combined Heat and Power (CHP) Fuel Cell Systems (FCSs): a Case Study of the United Kingdom** *Journal of Power Sources*.  
Prinz, F., B., Colella, W.
- **Design, Construction, and Testing of a Fuel Cell Powered Scooter** *Journal of Power Sources*.  
Prinz, F., B., Colella, W.
- **Modelling Results for the Thermal Management Sub-System of a Combined Heat and Power (CHP) Fuel Cell Systems (FCS)** *Journal of Power Sources*.  
Prinz, F., B., Colella, W.
- **Design Considerations for Effective Control of an Afterburner Sub-System in a Combined Heat and Power (CHP) Fuel Cell System (FCS)** *Journal of Power Sources*.  
Prinz, F., B., Colella, W.
- **Design Options for Achieving a Rapidly Variable Heat-to-Power Ratio in a Combined Heat and Power (CHP) Fuel Cell System** *Journal of Power Sources*.  
Prinz, F., B., Colella, W.
- **Near Net Shape Forming Of Advanced Structural Ceramic Devices**  
Prinz, F., B., Liu, H.
- **Micro-scale Electrochemistry: Application to Fuel Cell**  
Prinz, F., B., O'Hayre, R.

- **Cantilever Tip-Probe Arrays for Simultaneous SECM and AFM Analysis** *Rapid Prototyping Laboratory*  
Tao, Y., Fasching, R., Prinz, F.
- **The Mesicopter: A Meso-Scale Flight Vehicle** *NIAC Phase II Technical Proposal*  
Kroo, I., Prinz, F.
- **Atomic Layer Deposition of Platinum Catalysts on Nanowire Surfaces for Photoelectrochemical Water Reduction** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*  
Dasgupta, N. P., Liu, C., Andrews, S., Prinz, F. B., Yang, P.  
2013; 135 (35): 12932-12935
- **Ultra-thin platinum catalytic electrodes fabricated by atomic layer deposition.** *Physical chemistry chemical physics*  
An, J., Kim, Y., Prinz, F. B.  
2013; 15 (20): 7520-7525
- **Aberration-Corrected TEM Imaging of Oxygen Occupancy in YSZ** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*  
An, J., Koh, A. L., Park, J. S., Sinclair, R., Guer, T. M., Prinz, F. B.  
2013; 4 (7): 1156-1160
- **Enhanced oxygen exchange on surface-engineered yttria-stabilized zirconia.** *ACS nano*  
Chao, C., Park, J. S., Tian, X., Shim, J. H., Gür, T. M., Prinz, F. B.  
2013; 7 (3): 2186-2191
- **Spatial Variation of Available Electronic Excitations within Individual Quantum Dots** *NANO LETTERS*  
Jung, H. J., Dasgupta, N. P., Van Stockum, P. B., Koh, A. L., Sinclair, R., Prinz, F. B.  
2013; 13 (2): 716-721
- **Atomic Scale Verification of Oxide-Ion Vacancy Distribution near a Single Grain Boundary in YSZ** *Scientific Reports*  
An, J., Park, J. S., Koh, A. L., Lee, Hark, B., Jung, H. J., Schoonman, J., Prinz, F. B.  
2013
- **Effect of Cation Non-Stoichiometry and Crystallinity on the Ionic Conductivity of Atomic Layer Deposited Y:BaZrO<sub>3</sub> Films** *Thin Solid Films*  
Park, J., S., Kim, Y., B., An, J., Shim, J., H., Gür, T., M., Prinz, F., B.  
2013; 539: 166-169
- **Ultra-Thin Catalytic Electrodes for LT-SOFC** *Phys. Chem. Chem. Phys.*  
An, J., Kim, Y., B., Prinz, F., B.  
2013; 15: 7520
- **Editor's Choice (Materials Science: 3D Lowers T)** *Science*  
Prinz, F., B., Lavine, Marc, S.  
2013; 342: 15
- **Three-Dimensional Nanostructured Bilayer Solid Oxide Fuel Cell with 1.3 W/cm<sup>2</sup> at 450C** *Nano Letters*  
An, J., Kim, Y., Park, J., Gur, Turgut, M., Prinz, Fritz, B.  
2013
- **STANFORD ENGINEERS DEVELOP FUEL CELL THAT CAN DELIVER RECORD POWER-PER-SQUARE INCH AT RECORD-LOW TEMPERATURES (<http://engineering.stanford.edu/research-profile/stanford-engineers-develop-fuel-cell-can-deliver-record-power-square-inch-record-lo>)** *Stanford Engineering News*  
Prinz, F., B., Davenport, M.  
2013
- **Nanotubular Array Solid Oxide Fuel Cell** *ACS Nano*  
Motoyama, M., Chao, C., An, J., Jung, H. J., Gür, Turgut, M., Prinz, F. B.  
2013
- **Atomic layer deposition of thin-film ceramic electrolytes for high-performance fuel cells** *J. Mater. Chem. A (feature article)*  
Shim, J. H., Kang, S., Cha, S., Lee, W., Kim, Y. B., Park, J. S., Prinz, F. B.  
2013

- **Enhancing Charge Transfer Kinetics by Nanoscale Catalytic Cermet Interlayer** *ACS APPLIED MATERIALS & INTERFACES*  
An, J., Kim, Y., Guer, T. M., Prinz, F. B.  
2012; 4 (12): 6789-6794
- **Oxygen diffusion across the grain boundary in bicrystal yttria stabilized zirconia** *SOLID STATE COMMUNICATIONS*  
Park, J. S., Kim, Y., An, J., Prinz, F. B.  
2012; 152 (24): 2169-2171
- **Observing the Nucleation Phase of Atomic Layer Deposition In Situ** *CHEMISTRY OF MATERIALS*  
Mack, J. F., Van Stockum, P. B., Yemane, Y. T., Logar, M., Iwadate, H., Prinz, F. B.  
2012; 24 (22): 4357-4362
- **In Situ Cycle-by-Cycle Flash Annealing of Atomic Layer Deposited Materials** *JOURNAL OF PHYSICAL CHEMISTRY C*  
Langston, M. C., Dasgupta, N. P., Jung, H. J., Logar, M., Huang, Y., Sinclair, R., Prinz, F. B.  
2012; 116 (45): 24177-24183
- **Thickness effects of yttria-doped ceria interlayers on solid oxide fuel cells** *JOURNAL OF POWER SOURCES*  
Fan, Z., An, J., Iancu, A., Prinz, F. B.  
2012; 218: 187-191
- **Nickel Silicide Nanowire Arrays for Anti-Reflective Electrodes in Photovoltaics** *ADVANCED FUNCTIONAL MATERIALS*  
Dasgupta, N. P., Xu, S., Jung, H. J., Iancu, A., Fasching, R., Sinclair, R., Prinz, F. B.  
2012; 22 (17): 3650-3657
- **Ab initio kinetic Monte Carlo model of ionic conduction in bulk yttria-stabilized zirconia** *MODELLING AND SIMULATION IN MATERIALS SCIENCE AND ENGINEERING*  
Lee, E., Prinz, F. B., Cai, W.  
2012; 20 (6)
- **Improved oxygen surface exchange kinetics at grain boundaries in nanocrystalline yttria-stabilized zirconia** *MRS COMMUNICATIONS*  
Park, J. S., Holme, T. P., Shim, J. H., Prinz, F. B.  
2012; 2 (3): 107-111
- **High aspect ratio and high breakdown strength metal-oxide capacitors** *APPLIED PHYSICS LETTERS*  
Usui, T., Mollinger, S. A., IANCU, A. T., Reis, R. M., Prinz, F. B.  
2012; 101 (3)
- **Structural and compositional analysis of solid oxide fuel cell electrolytes using transmission electron microscopy** *INTERNATIONAL JOURNAL OF PRECISION ENGINEERING AND MANUFACTURING*  
An, J., Kim, Y. B., Jung, H. J., Park, J. S., Cha, S. W., Guer, T. M., Prinz, F. B.  
2012; 13 (7): 1273-1279
- **Nanoscale impedance and complex properties in energy-related systems** *MRS BULLETIN*  
Lee, W., Prinz, F. B., Chen, X., Nonnenmann, S., Bonnell, D. A., O'Hayre, R. P.  
2012; 37 (7): 659-667
- **Nanostructured Platinum Catalysts by Atomic-Layer Deposition for Solid-Oxide Fuel Cells** *ADVANCED ENERGY MATERIALS*  
Chao, C., Motoyama, M., Prinz, F. B.  
2012; 2 (6): 651-654
- **Oxygen Surface Exchange at Grain Boundaries of Oxide Ion Conductors** *ADVANCED FUNCTIONAL MATERIALS*  
Lee, W., Jung, H. J., Lee, M. H., Kim, Y., Park, J. S., Sinclair, R., Prinz, F. B.  
2012; 22 (5): 965-971
- **Nanoscale membrane electrolyte array for solid oxide fuel cells** *ELECTROCHEMISTRY COMMUNICATIONS*  
Su, P., Prinz, F. B.  
2012; 16 (1): 77-79
- **Enhanced oxygen exchange and incorporation at surface grain boundaries on an oxide ion conductor** *ACTA MATERIALIA*  
Shim, J. H., Park, J. S., Holme, T. P., Crabb, K., Lee, W., Kim, Y. B., Tian, X., Guer, T. M., Prinz, F. B.

2012; 60 (1): 1-7

- **Fluorine contamination in yttrium-doped barium zirconate film deposited by atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*  
An, J., Kim, Y. B., Park, J. S., Shim, J. H., Guer, T. M., Prinz, F. B.  
2012; 30 (1)
- **Use of a high-flow diaphragm valve in the exhaust line of atomic layer deposition reactors** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*  
Dasgupta, N. P., Trejo, O., Prinz, F. B.  
2012; 30 (1)
- **Patterned Silver Nanomesh Cathode for Low-Temperature Solid Oxide Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Shim, J. H., Kim, Y. B., Park, J. S., An, J., Guer, T. M., Prinz, F. B.  
2012; 159 (5): B541-B545
- **Mechanical masking of films deposited by atomic layer deposition** *JOURNAL OF VACUUM SCIENCE & TECHNOLOGY A*  
Langston, M. C., Usui, T., Prinz, F. B.  
2012; 30 (1)
- **Surface-Modified Low-Temperature Solid Oxide Fuel Cell** *ADVANCED FUNCTIONAL MATERIALS*  
Kim, Y. B., Holme, T. P., Guer, T. M., Prinz, F. B.  
2011; 21 (24): 4684-4690
- **Oxygen activation over engineered surface grains on YDC/YSZ interlayered composite electrolyte for LT-SOFC** *JOURNAL OF POWER SOURCES*  
Kim, Y. B., Park, J. S., Guer, T. M., Prinz, F. B.  
2011; 196 (24): 10550-10555
- **A combined scanning tunneling microscope-atomic layer deposition tool** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Mack, J. F., Van Stockum, P. B., Iwadata, H., Prinz, F. B.  
2011; 82 (12)
- **ALD for clean energy conversion, utilization, and storage** *MRS BULLETIN*  
Elam, J. W., Dasgupta, N. P., Prinz, F. B.  
2011; 36 (11): 899-906
- **In vivo electrochemical impedance measurement on single cell membrane** *MICROELECTRONIC ENGINEERING*  
Bai, S., Prinz, F. B.  
2011; 88 (10): 3094-3100
- **Effect of crystallinity on proton conductivity in yttrium-doped barium zirconate thin films** *SOLID STATE IONICS*  
Kim, Y. B., Guer, T. M., Jung, H., Kang, S., Sinclair, R., Prinz, F. B.  
2011; 198 (1): 39-46
- **Three-dimensional biodegradable microscavfolding: Scaffold characterization and cell population at single cell resolution** *ACTA BIOMATERIALIA*  
Ryu, W., Hammerick, K. E., Kim, Y. B., Kim, J. B., Fasching, R., Prinz, F. B.  
2011; 7 (9): 3325-3335
- **Cup-shaped yttria-doped barium zirconate membrane fuel cell array** *MICROELECTRONIC ENGINEERING*  
Su, P., Prinz, F. B.  
2011; 88 (8): 2405-2407
- **In vivo O<sub>2</sub> measurement inside single photosynthetic cells** *BIOTECHNOLOGY LETTERS*  
Bai, S., Ryu, W., Fasching, R. J., Grossman, A. R., Prinz, F. B.  
2011; 33 (8): 1675-1681
- **Improved Solid Oxide Fuel Cell Performance with Nanostructured Electrolytes** *ACS NANO*  
Chao, C., Hsu, C., Cui, Y., Prinz, F. B.  
2011; 5 (7): 5692-5696
- **Nonprecious Metal Catalysts for Low Temperature Solid Oxide Fuel Cells** *JOURNAL OF PHYSICAL CHEMISTRY C*  
Holme, T. P., Prinz, F. B.

2011; 115 (23): 11641-11648

- **Enhancing Oxide Ion Incorporation Kinetics by Nanoscale Yttria-Doped Ceria interlayers** *NANO LETTERS*  
Fan, Z., Prinz, F. B.  
2011; 11 (6): 2202-2205
- **Crater patterned 3-D proton conducting ceramic fuel cell architecture with ultra thin Y:BaZrO<sub>3</sub> electrolyte** *ELECTROCHEMISTRY COMMUNICATIONS*  
Kim, Y. B., Guer, T. M., Kang, S., Jung, H., Sinclair, R., Prinz, F. B.  
2011; 13 (5): 403-406
- **Atomic Layer Deposition of Lead Sulfide Quantum Dots on Nanowire Surfaces** *NANO LETTERS*  
Dasgupta, N. P., Jung, H. J., Trejo, O., McDowell, M. T., Hryciw, A., Brongersma, M., Sinclair, R., Prinz, F. B.  
2011; 11 (3): 934-940
- **Enhancing ionic conductivity of bulk single-crystal yttria-stabilized zirconia by tailoring dopant distribution** *PHYSICAL REVIEW B*  
Lee, E., Prinz, F. B., Cai, W.  
2011; 83 (5)
- **Elastic Properties of Induced Pluripotent Stem Cells** *TISSUE ENGINEERING PART A*  
Hammerick, K. E., Huang, Z., Sun, N., Lam, M. T., Prinz, F. B., Wu, J. C., Commons, G. W., Longaker, M. T.  
2011; 17 (3-4): 495-502
- **Gadolinia-doped Ceria Cathode Interlayer for Low Temperature Solid Oxide Fuel Cell** *12th International Symposium on Solid Oxide Fuel Cells (SOFC)*  
Kim, Y. B., Guer, T. M., Prinz, F. B.  
ELECTROCHEMICAL SOC INC.2011: 1155-59
- **Silver Nanomesh as a Cathode for Solid Oxide Fuel Cells** *ECS Transactions*  
Shim, J., H., Kim, Y., B., Park, J., S., Prinz, F., B.  
2011; 35: 2209-2212
- **Low Temperature Direct Methanol Fuel Cell With YSZ Electrolyte** *ECS Trans*  
Komadina, J., Kim, Y. B., Park, J. S., Gür, T., Kang, S. K., Prinz, F. B.  
2011; 35
- **Atomic Layer Deposited Yttria Stabilized Zirconia Barrier Layer for Proton Conducting Oxide (Invited)** *ECS Trans*  
Park, J., S., Kang, S., K., Gür, T., M., Prinz, F., B.  
2011; 41: 315-319
- **Improving solid oxide fuel cells with yttria-doped ceria interlayers by atomic layer deposition** *JOURNAL OF MATERIALS CHEMISTRY*  
Fan, Z., Chao, C., Hossein-Babaei, F., Prinz, F. B.  
2011; 21 (29): 10903-10906
- **Stress-driven grain growth in nanocrystalline Pt thin films** *SCRIPTA MATERIALIA*  
Sharon, J. A., Su, P., Prinz, F. B., Hemker, K. J.  
2011; 64 (1): 25-28
- **Low Temperature Direct Methanol Fuel Cell with YSZ Electrolyte** *12th International Symposium on Solid Oxide Fuel Cells (SOFC)*  
Komadina, J., Kim, Y. B., Park, J. S., Guer, T. M., Kang, S., Prinz, F. B.  
ELECTROCHEMICAL SOC INC.2011: 2855-66
- **Atomic Layer Deposited Yttria Stabilized Zirconia Barrier Layer for Proton Conducting Oxide** *7th Symposium on Atomic Layer Deposition Applications/220th Meeting of the Electrochemical-Society (ECS)*  
Park, J. S., Kang, S. K., Guer, T. M., Prinz, F. B.  
ELECTROCHEMICAL SOC INC.2011: 315-19
- **Fabrication of Nanotubular Membrane Electrode Assembly for A Solid Oxide Fuel Cell** *Symposium on Tutorials in Nanotechnology - Focus on Luminescence and Display Materials/218th Meeting of the Electrochemical-Society/High Resolution Characterization of Corrosion Processes 2/Symposium on Solid State Ionic Devices 8 - NEMCA*  
Motoyama, M., Chao, C., Guer, T. M., Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2011: 129-39

- **ALD-METAL UNCOOLED BOLOMETER** *24th IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*  
Yoneoka, S., Liger, M., Yama, G., Schuster, R., Purkl, F., Provine, J., Prinz, F. B., Howe, R. T., Kenny, T. W.  
IEEE.2011: 676-679
- **Epitaxial and Polycrystalline Gadolinia-Doped Ceria Cathode Interlayers for Low Temperature Solid Oxide Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Kim, Y. B., Shim, J. H., Guer, T. M., Prinz, F. B.  
2011; 158 (11): B1453-B1457
- **Electrodeposited Metallic Nanowires as a Scanning Probe Tip** *International Symposium on Pits and Pores IV - New Materials and Applications in Memory of Ulrich Gosele as Part of the 218th Meeting of the Electrochemical-Society*  
Motoyama, M., Prinz, F. B.  
ELECTROCHEMICAL SOC INC.2011: 101-8
- **Scanning tunneling spectroscopy of lead sulfide quantum wells fabricated by atomic layer deposition** *NANOTECHNOLOGY*  
Lee, W., Dasgupta, N. P., Jung, H. J., Lee, J., Sinclair, R., Prinz, F. B.  
2010; 21 (48)
- **Evidence of Proton Transport in Atomic Layer Deposited Yttria-Stabilized Zirconia Films** *CHEMISTRY OF MATERIALS*  
Park, J. S., Kim, Y. B., Shim, J. H., Kang, S., Guer, T. M., Prinz, F. B.  
2010; 22 (18): 5366-5370
- **Atomic Layer Deposition of Al-doped ZnO Films: Effect of Grain Orientation on Conductivity** *CHEMISTRY OF MATERIALS*  
Dasgupta, N. P., Neubert, S., Lee, W., Trejo, O., Lee, J., Prinz, F. B.  
2010; 22 (16): 4769-4775
- **Increased Cathodic Kinetics on Platinum in IT-SOFCs by Inserting Highly Ionic-Conducting Nanocrystalline Materials** *JOURNAL OF FUEL CELL SCIENCE AND TECHNOLOGY*  
Huang, H., Holme, T., Prinz, F. B.  
2010; 7 (4)
- **In vitro effects of direct current electric fields on adipose-derived stromal cells** *BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS*  
Hammerick, K. E., Longaker, M. T., Prinz, F. B.  
2010; 397 (1): 12-17
- **Active water management at the cathode of a planar air-breathing polymer electrolyte membrane fuel cell using an electroosmotic pump** *JOURNAL OF POWER SOURCES*  
Fabian, T., O'Hayre, R., Litster, S., Prinz, F. B., Santiago, J. G.  
2010; 195 (11): 3640-3644
- **Atomic Layer Deposition (ALD) Co-Deposited Pt-Ru Binary and Pt Skin Catalysts for Concentrated Methanol Oxidation** *CHEMISTRY OF MATERIALS*  
Jiang, X., Guer, T. N., Prinz, F. B., Bent, S. F.  
2010; 22 (10): 3024-3032
- **Passive water management at the cathode of a planar air-breathing proton exchange membrane fuel cell** *JOURNAL OF POWER SOURCES*  
Fabian, T., O'Hayre, R., Litster, S., Prinz, F. B., Santiago, J. G.  
2010; 195 (10): 3201-3206
- **Area-Selective Atomic Layer Deposition of Lead Sulfide: Nanoscale Patterning and DFT Simulations** *LANGMUIR*  
Lee, W., Dasgupta, N. P., Trejo, O., Lee, J., Hwang, J., Usui, T., Prinz, F. B.  
2010; 26 (9): 6845-6852
- **Direct Extraction of Photosynthetic Electrons from Single Algal Cells by Nanoprobng System** *NANO LETTERS*  
Ryu, W., Bai, S., Park, J. S., Huang, Z., Moseley, J., Fabian, T., Fasching, R. J., Grossman, A. R., Prinz, F. B.  
2010; 10 (4): 1137-1143
- **Design of an atomic layer deposition reactor for hydrogen sulfide compatibility** *REVIEW OF SCIENTIFIC INSTRUMENTS*  
Dasgupta, N. P., Mack, J. F., Langston, M. C., Bousetta, A., Prinz, F. B.  
2010; 81 (4)

- **Modification of Nafion (R) Using 3-mercaptopropyl Trimethoxysilane** *JOURNAL OF THE KOREAN PHYSICAL SOCIETY*  
Lee, H., Park, S. B., Oh, M., Coo, K., Park, Y., Suzuki, S., Nagai, M., Prinz, F. B.  
2010; 56 (4): 1215-1222
- **Atomistic simulations of surface segregation of defects in solid oxide electrolytes** *ACTA MATERIALIA*  
Lee, H. B., Prinz, F. B., Cai, W.  
2010; 58 (6): 2197-2206
- **Pulsed Direct Current Electric Fields Enhance Osteogenesis in Adipose-Derived Stromal Cells** *TISSUE ENGINEERING PART A*  
Hammerick, K. E., James, A. W., Huang, Z., Prinz, F. B., Longaker, M. T.  
2010; 16 (3): 917-931
- **Kinetic Monte Carlo simulations of oxygen vacancy diffusion in a solid electrolyte: Computing the electrical impedance using the fluctuation-dissipation theorem** *ELECTROCHEMISTRY COMMUNICATIONS*  
Lee, E., Prinz, F. B., Cai, W.  
2010; 12 (2): 223-226
- **Sputtered Pt-Ru Alloys as Catalysts for Highly Concentrated Methanol Oxidation** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Jiang, X., Guer, T. M., Prinz, F. B., Bent, S. F.  
2010; 157 (3): B314-B319
- **Effects of Ion Irradiation on the Performance of Solid Oxide Fuel Cells** *J. Electrochem. Soc.*  
Crabb, K., M., Park, J., S., Chao, C. -C., Prinz, F., B.  
2010; 157: 166-172
- **Dopant-Induced Electronic Structure Modification of HOPG Surfaces: Implications for High Activity Fuel Cell Catalysts** *J. Phys. Chem. C*  
Prinz, F., B., Zhou, Y., Holme, T., Berry, J., Ohno, T., Ginley, D.  
2010; 114: 506-515
- **First principles study of doped carbon supports for enhanced platinum catalysts** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*  
Holme, T., Zhou, Y., Pasquarelli, R., O'Hayre, R.  
2010; 12 (32): 9461-9468
- **Effects of Ion Irradiation on the Performance of Solid Oxide Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Crabb, K. M., Park, J. S., Chao, C., Prinz, F. B.  
2010; 157 (1): B166-B172
- **Interpretation of Low Temperature Solid Oxide Fuel Cell Electrochemical Impedance Spectra** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Holme, T. P., Pornprasertsuk, R., Prinz, F. B.  
2010; 157 (1): B64-B70
- **Nanopore Patterned Pt Array Electrodes for Triple Phase Boundary Study in Low Temperature SOFC** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Kim, Y. B., Hsu, C., Connor, S. T., Guer, T. M., Cui, Y., Prinz, F. B.  
2010; 157 (9): B1269-B1274
- **Impact of Accompanying Hydrogen Generation on Metal Nanotube Electrodeposition** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Motoyama, M., Fukunaka, Y., Ogata, Y. H., Prinz, F. B.  
2010; 157 (6): D357-D369
- **Catalysts with Pt Surface Coating by Atomic Layer Deposition for Solid Oxide Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Shim, J. H., Jiang, X., Bent, S. F., Prinz, F. B.  
2010; 157 (6): B793-B797
- **Reduction and oxidation of oxide ion conductors with conductive atomic force microscopy** *NANOTECHNOLOGY*  
Lee, W., Lee, M., Kim, Y., Prinz, F. B.  
2009; 20 (44)
- **Surface Modification of Yttria-Stabilized Zirconia Electrolyte by Atomic Layer Deposition** *NANO LETTERS*  
Chao, C., Kim, Y. B., Prinz, F. B.



2009; 9 (10): 3626-3628

- **Atomic Layer Deposition of Lead Sulfide Thin Films for Quantum Confinement** *CHEMISTRY OF MATERIALS*  
Dasgupta, N. P., Lee, W., Prinz, F. B.  
2009; 21 (17): 3973-3978
- **Intermediate-Temperature Ceramic Fuel Cells with Thin Film Yttrium-Doped Barium Zirconate Electrolytes** *CHEMISTRY OF MATERIALS*  
Shim, J. H., Park, J. S., An, J., Guer, T. M., Kang, S., Prinz, F. B.  
2009; 21 (14): 3290-3296
- **A Computational Comparison of Electron Transfer from Reduced Ferredoxin to Flavin Adenine Dinucleotide and a Gold Electrode** *JOURNAL OF PHYSICAL CHEMISTRY B*  
Walch, S. P., Komadina, J. D., Prinz, F. B.  
2009; 113 (20): 7298-7307
- **Area-Selective Atomic Layer Deposition Using Self-Assembled Monolayer and Scanning Probe Lithography** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Lee, W., Prinz, F. B.  
2009; 156 (9): G125-G128
- **Electrochemical Deposition of Metallic Nanowires as a Scanning Probe Tip** *ECS Trans.*  
Motoyama, M., Dasgupta, N., P., Prinz, F., B.  
2009; 16: 3-12
- **Geometric Effects of Triple Phase Boundary in Solid Oxide Fuel Cells** *ECS Trans.*  
Kim, Y., B., Chao, C. -C., Gür, T., M., Prinz, F., B.  
2009; 25: 917-924
- **Synthesis of Microscale Lead Sulfide Disks by Patterned Self-Assembled Monolayer** *ECS Trans.*  
Usui, T., Dasgupta, N., P., Jiang, X., Lee, W., Prinz, F., B.  
2009; 25: 3-8
- **Solid Oxide Fuel Cells with Atomic Layer Deposited Platinum Catalyst** *ECS Trans.*  
Chao, C. -C., Prinz, F., B.  
2009; 25: 855-858
- **Design of heterogeneous catalysts and the application to the oxygen reduction reaction** *Thin Film Metal-Oxides: Fundamentals and Applications, Springer*  
Holme, T., Huang, H., Prinz, F.  
2009
- **Improving PEM fuel cell catalyst activity and durability using nitrogen-doped carbon supports: observations from model Pt/HOPG systems** *J. Mater. Chem.*  
Prinz, F., B., Zhou, Y., Pasquarelli, R., Holme, T., Berry, J., Ginley, D.  
2009; 19: 7830
- **ATOMIC LAYER DEPOSITION OF PbS-ZnS QUANTUM WELLS FOR HIGH-EFFICIENCY SOLAR CELLS** *34th IEEE Photovoltaic Specialists Conference*  
Dasgupta, N. P., Lee, W., Holme, T. P., Prinz, F. B.  
IEEE.2009: 2299-2303
- **Electrochemical Deposition of Metallic Nanowires as a Scanning Probe Tip** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Motoyama, M., Dasgupta, N. P., Prinz, F. B.  
2009; 156 (10): D431-D438
- **SCANNING TUNNELING MICROSCOPY OF QUANTUM CONFINEMENT EFFECTS IN LEAD SULFIDE THIN FILMS** *34th IEEE Photovoltaic Specialists Conference*  
Lee, W., Dasgupta, N. P., Prinz, F. B.  
IEEE.2009: 1257-1259
- **Characteristics of Oxygen Reduction on Nanocrystalline YSZ** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Huang, H., Shim, J. H., Chao, C., Pornprasertsuk, R., Sugawara, M., Guer, T. M., Prinz, F. B.

2009; 156 (3): B392-B396

- **An Image-Based Localization Algorithm for Catheter Navigation in the Left Atrium** *11th International Symposium on Experimental Robotics (ISER)*  
Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H., Prinz, F. B.  
SPRINGER-VERLAG BERLIN.2009: 251–260
- **ENERGY TRANSFER BETWEEN QUANTUM DOTS OF DIFFERENT SIZES FOR QUANTUM DOT SOLAR CELLS** *34th IEEE Photovoltaic Specialists Conference*  
Holme, T. P., Chao, C. C., Prinz, F. B.  
IEEE.2009: 2137–2141
- **Kinetic Monte Carlo Simulations of Solid Oxide Fuel Cell** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Pornprasertsuk, R., Holme, T., Prinz, F. B.  
2009; 156 (12): B1406-B1416
- **Atomic layer deposition of LSM cathodes for solid oxide fuel cells** *16th International Conference on Solid State Ionics*  
Holme, T. P., Lee, C., Prinz, F. B.  
ELSEVIER SCIENCE BV.2008: 1540–44
- **Open micro-fluidic system for atomic force microscopy-guided in situ electrochemical probing of a single cell** *LAB ON A CHIP*  
Ryu, W., Huang, Z., Park, J. S., Moseley, J., Grossman, A. R., Fasching, R. J., Prinz, F. B.  
2008; 8 (9): 1460-1467
- **Solid oxide fuel cell with corrugated thin film electrolyte** *NANO LETTERS*  
Su, P., Chao, C., Shim, J. H., Fasching, R., Prinz, F. B.  
2008; 8 (8): 2289-2292
- **Application of atomic layer deposition of platinum to solid oxide fuel cells** *CHEMISTRY OF MATERIALS*  
Jiang, X., Huang, H., Prinz, F. B., Bent, S. F.  
2008; 20 (12): 3897-3905
- **Proton conduction in thin film yttrium-doped barium zirconate** *APPLIED PHYSICS LETTERS*  
Shim, J. H., Guer, T. M., Prinz, F. B.  
2008; 92 (25)
- **Nanoscale probe system for cell-organelle analysis** *SENSORS AND ACTUATORS B-CHEMICAL*  
Bai, S., Fabian, T., Prinz, F. B., Fasching, R. J.  
2008; 130 (1): 249-257
- **3D Microfluidic Approach to Mechanical Stimulation of Osteocyte Processes** *CELLULAR AND MOLECULAR BIOENGINEERING*  
You, L., Temiyasathit, S., Tao, E., Prinz, F., Jacobs, C. R.  
2008; 1 (1): 103-107
- **A resolution study for electrostatic force microscopy on bimetallic samples using the boundary element method** *NANOTECHNOLOGY*  
Shen, Y., Lee, M., Lee, W., Barnett, D. M., Pinsky, P., Prinz, F. B.  
2008; 19 (3)
- **Thermal stabilities of nanoporous metallic electrodes at elevated temperatures** *JOURNAL OF POWER SOURCES*  
Wang, X., Huang, H., Holme, T., Tian, X., Prinz, F. B.  
2008; 175 (1): 75-81
- **Oxidative Removal of Self-Assembled Monolayers for Selective Atomic Layer Deposition** *4th Symposium on Atomic Layer Deposition Applications held at the 214th Meeting of the Electrochemical-Society*  
Lee, W., Chao, C., Jiang, X., Hwang, J., Bent, S. F., Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2008: 173–79
- **Characteristics of Oxygen Reduction on Nanocrystalline YSZ** *ECS Trans.*  
Huang, H., Shim, J., H., Chao, C., C., Pornprasertsuk, R., Sugawara, M., Gür, T., M., Prinz, F. B.  
2008; 13: 97-104
- **In-Plane Conductivities of Atomic Layer Deposited Yttria-Stabilized Zirconia Electrolytes for Solid Oxide Fuel Cells** *ECS Trans.*

- Chao, C., C., Park, J., S., Prinz, F., B.  
2008; 16: 157-164
- **Atomic Layer Deposition of Mixed Conducting Cathodes for Solid Oxide Fuel Cells** *Solid State Ion.*  
Holme, T., Lee, C., Prinz, F.  
2008; 179: 1540-1544
  - **Fabrication and Characterization of Lead Sulfide Thin Films by Atomic Layer Deposition"** *ECS Trans.*  
Dasgupta, N., P., Walch, S., P., Prinz, F., B.  
2008; 16: 29-36
  - **Pt-Ru Alloys Deposited by Sputtering as Catalysts for Methanol Oxidation** *8th Symposium on Proton Exchange Membrane Fuel Cells*  
Jiang, X., Prinz, F. B., Bent, S. F.  
ELECTROCHEMICAL SOCIETY INC.2008: 605-12
  - **Reversible oxidation of spinach ferredoxin at surface-modified electrodes** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Komadina, J., Walch, S., Fasching, R., Grossman, A., Prinz, F. B.  
2008; 155 (10): B1008-B1012
  - **Fabrication and Characterization of Lead Sulfide Thin Films by Atomic Layer Deposition** *4th Symposium on Atomic Layer Deposition Applications held at the 214th Meeting of the Electrochemical-Society*  
Dasgupta, N. P., Walch, S. P., Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2008: 29-36
  - **INCREASED CATHODIC KINETICS IN IT-SOFCs BY INSERTING HIGHLY-CONDUCTIVE NANOCRYSTALLINE MATERIALS** *6th International Conference on Fuel Cell Science, Engineering and Technology*  
Huang, H., Holme, T., Prinz, F. B.  
AMER SOC MECHANICAL ENGINEERS.2008: 55-60
  - **Opportunities of ALD for Thin Film Solid Oxide Fuel Cells** *4th Symposium on Atomic Layer Deposition Applications held at the 214th Meeting of the Electrochemical-Society*  
Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2008: 15-18
  - **Biodegradable micro-osmotic pump for long-term and controlled release of basic fibroblast growth factor** *JOURNAL OF CONTROLLED RELEASE*  
Ryu, W., Huang, Z., Prinz, F. B., Goodman, S. B., Fasching, R.  
2007; 124 (1-2): 98-105
  - **Fabrication of multi-layered biodegradable drug delivery device based on micro-structuring of PLGA polymers** *BIOMEDICAL MICRODEVICES*  
Ryu, W. H., Vyakarnam, M., Greco, R. S., Prinz, F. B., Fasching, R. J.  
2007; 9 (6): 845-853
  - **High temperature O-17 MAS NMR study scandia and yttria stabilized of calcia, magnesia, zirconia** *SOLID STATE IONICS*  
Kim, N., Hsieh, C., Huang, H., Prinz, F. B., Stebbins, J. F.  
2007; 178 (27-28): 1499-1506
  - **Atomic layer deposition and chemical vapor deposition precursor selection method application to strontium and barium precursors** *JOURNAL OF PHYSICAL CHEMISTRY A*  
Holme, T. P., Prinz, F. B.  
2007; 111 (33): 8147-8151
  - **FUEL 192-Conversion of a plant chloroplast to a biological fuel cell**  
Walch, S. P., Komadina, J. D., Prinz, F. B.  
AMER CHEMICAL SOC.2007
  - **COMP 73-Conversion of a plant chloroplast to a biological fuel cell: 1. Comparison of electron transfer from reduced ferredoxin to FAD and a gold electrode**  
Walch, S. P., Komadina, J. D., Prinz, F. B.  
AMER CHEMICAL SOC.2007
  - **Atomic layer deposition of yttria-stabilized zirconia for solid oxide fuel cells** *CHEMISTRY OF MATERIALS*

- Shim, J. H., Chao, C., Huang, H., Prinz, F. B.  
2007; 19 (15): 3850-3854
- **Engineering model of a passive planar air breathing fuel cell cathode** *JOURNAL OF POWER SOURCES*  
O'Hayre, R., Fabian, T., Litster, S., Prinz, F. B., Santiago, J. G.  
2007; 167 (1): 118-129
  - **The construction of three-dimensional micro-fluidic scaffolds of biodegradable polymers by solvent vapor based bonding of micro-molded layers** *BIOMATERIALS*  
Ryu, W., Min, S. W., Hammerick, K. E., Vyakarnam, M., Greco, R. S., Prinz, F. B., Fasching, R. J.  
2007; 28 (6): 1174-1184
  - **Electrochemical impedance analysis of solid oxide fuel cell electrolyte using kinetic Monte Carlo technique** *SOLID STATE IONICS*  
Pornprasertsuk, R., Cheng, J., Huang, H., Prinz, F. B.  
2007; 178 (3-4): 195-205
  - **High-performance ultrathin solid oxide fuel cells for low-temperature operation** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Huang, H., Nakamura, M., Su, P., Fasching, R., Saito, Y., Prinz, F. B.  
2007; 154 (1): B20-B24
  - **Active Water Management for PEM Fuel Cells** *Journal of Electrochemical Society*  
Prinz, F., B., Litster, S., Buie, C., R., Fabian, T., Eaton, J., K., Santiago, J., G.  
2007; B1049: 154
  - **Oxygen Reduction Characteristics on Ag, Pt, and Ag-Pt Alloys in Low-Temperature SOFCs** *ECS Transactions*  
Huang, H., Holme, Tim, P., Prinz, Fritz, B.  
2007; 3
  - **High Surface Area Density Nano Thin Film Solid Oxide Fuel Cells**  
Su, P., Fasching, R., Prinz, F., B.  
2007
  - **Transient behaviour of magnetic micro-bead chains rotating in a fluid by external fields** *Lab Chip*  
Prinz, F., B., Petousis, I., Homburg, E., Derks, R., Dietzel, A.  
2007; 7: 1746-1751
  - **Measurement of temperature and reaction species in the cathode diffusion layer of a free-convection fuel cell** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Fabian, T., O'Hayre, R., Prinz, F. B., Santiago, J. G.  
2007; 154 (9): B910-B918
  - **A CAD integration framework for designing devices with atomic scale resolution** *Conference on Instrumentation, Metrology and Standards for Nanomanufacturing*  
Chang, Y., Ramaswami, K., Pinilla, M., Walch, S., Prinz, F.  
SPIE-INT SOC OPTICAL ENGINEERING.2007
  - **AFM/EC nano probing of single cells and organelles** *6th IEEE Sensors Conference*  
Fasching, R., Ryu, W., Bai, S., Park, J., Fabian, T., Moseley, J., Grossman, A., Prinz, F.  
IEEE.2007: 699-702
  - **Ionic conduction in nanoscale films of yttrium-doped barium zirconate** *Symposium on Solid-State Ionics held at the 2006 MRS Fall Meeting*  
Shim, J. H., Gur, T. M., Prinz, F. B.  
MATERIALS RESEARCH SOCIETY.2007: 63-67
  - **Microfabrication technology of biodegradable polymers for interconnecting microstructures** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Ryu, W., Fasching, R. J., Vyakarnam, M., Greco, R. S., Prinz, F. B.  
2006; 15 (6): 1457-1465
  - **Water management in proton exchange membrane fuel cells using integrated electroosmotic pumping** *JOURNAL OF POWER SOURCES*  
Buie, C. R., Posner, J. D., Fabian, T., Cha, S., Kim, D., Prinz, F. B., Eaton, J. K., Santiago, J. G.  
2006; 161 (1): 191-202

- **Electrochemical impedance investigation of flooding in micro-flow channels for proton exchange membrane fuel cells** *JOURNAL OF POWER SOURCES*  
Cha, S. W., O'Hayre, R., Park, Y., Prinz, F. B.  
2006; 161 (1): 138-142
- **The role of ambient conditions on the performance of a planar, air-breathing hydrogen PEM fuel cell** *JOURNAL OF POWER SOURCES*  
Fabian, T., Posner, J. D., O'Hayre, R., Cha, S., Eaton, J. K., Prinz, F. B., Santiago, J. G.  
2006; 161 (1): 168-182
- **High ionic conductivity in ultrathin nanocrystalline gadolinia-doped ceria films** *APPLIED PHYSICS LETTERS*  
Huang, H., Gur, T. M., Saito, Y., Prinz, F.  
2006; 89 (14)
- **Geometric artefact suppressed surface potential measurements** *NANOTECHNOLOGY*  
Lee, M., Lee, W., Prinz, F. B.  
2006; 17 (15): 3728-3733
- **Nanoscale electrochemical probes for single cell analysis** *31st International Conference on Micro- and Nano-Engineering*  
Fasching, R. J., Bai, S., Fabian, T., Prinz, F. B.  
ELSEVIER SCIENCE BV.2006: 1638-41
- **Thin-film solid oxide fuel cells on porous nickel substrates with multistage nanohole array** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Kang, S., Su, P. C., Park, Y. I., Saito, Y., Prinz, F. B.  
2006; 153 (3): A554-A559
- **Making Photovoltaic Power Competitive with Grid Power**  
Prinz, F., B., Gowrishankar, V., Hutton, D., Fluhrer, C., Dasgupta, N.  
2006
- **Water Removal from Proton Exchange Membrane Fuel Cells via Electroosmotic Pumping** *ECS Trans.*  
Buie, C., R., Posner, J., Fabian, T., Cha, S., W., Kim, D., Prinz, F., B.  
2006; 6 (1): 439
- **Micro-structured Biodegradable Polymers Embedded with Cells and Drugs for Tissue Engineering and Drug Delivery**  
Ryu, W., H., Fasching, R., Hammerick, K., Min, S., Prinz, F., B.  
2006
- **Water Management at the Cathode of a Planar Air-Breathing Fuel Cell with an Electroosmotic Pump** *ECS Trans.*  
Fabian, T., O'Hayre, R., Litster, S., Prinz, F., B., Santiago, J., G.  
2006; 3 (1): 949
- **MEMS Fabrication and Performances of Nano-Thin Solid Oxide Fuel Cell** *208th ECS Meeting*  
Huang, H., Nakamura, M., Su, P., Fasching, R., Saito, Y., Prinz, F., B.  
2006
- **Interconnected Biodegradable Polymers in Sub-Micron Precision** *Transaction of the 31st annual meeting of the society for biomaterials, Pittsburgh*  
Fasching, R., Ryu, W., H., Prinz, F.  
2006; 29
- **3D Multi-layered Micro-fabricated Tissue Scaffolds of Biodegradable Polymers** *Transaction of the 31st annual meeting of the society for biomaterials, Pittsburgh*  
Ryu, W., H., Min, S., Fasching, R., Prinz, F.  
2006; 29
- **Proton Transport Membranes for Fuel Cells: Polymeric versus Dense Ceramic** *ECS Trans.*  
Shim, J., H., Cha, S., W., O'Hayre, R., Gür, T., M., Prinz, F., B.  
2006; 3 (1): 1059
- **Fuel Cells for Intermediate Temperature Operation** *J. Korean Ceram. Soc.*  
Shim, Joon, H., Cha, S. W., Gür, Turgut, M., Prinz, F., B.  
2006; 43 (12): 751

- **Combined Heat and Mass Transfer Model of a Passive Air Breathing Fuel Cell Cathode** *ECS Trans.*  
O'Hayre, R., Fabian, T., Litster, S., Prinz, F., B., Santiago, J., G.  
2006; 1 (3): 1125
- **Biodegradable Micro-Fluidic Sheet-Devices for Programmed Drug Release** *Transactions of the 33rd annual meeting and exposition of the controlled release society, Vienna, Austria*  
Ryu, W., H., Prinz, F., B., Greco, R., S., Fasching, R.  
2006
- **A microfabricated direct methanol fuel cell with integrated electroosmotic pump** *19th IEEE International Conference on Micro Electro Mechanical Systems (MEMS 2006)*  
Buie, C. R., BANIN, Y., Tang, C. Y., Santiago, J. G., Prinz, F. B., Pruitt, B. L.  
IEEE.2006: 938–941
- **Nanofabrication of electrochemical planar probes for single cell analysis** *Conference on Micromachining and Microfabrication Process Technology XI*  
Fasching, R. J., Bai, S., Fabian, T., Prinz, F. B.  
SPIE-INT SOC OPTICAL ENGINEERING.2006
- **Thin-film SOFCs using gastight YSZ thin films on nanoporous substrates** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Park, Y. I., Su, P. C., Cha, S. W., Saito, Y., Prinz, F. B.  
2006; 153 (2): A431-A436
- **Finding narrow passages with Probabilistic Roadmaps: The small-step retraction method** *AUTONOMOUS ROBOTS*  
Saha, M., Latombe, J. C., Chang, Y. C., Prinz, F.  
2005; 19 (3): 301-319
- **Predicting ionic conductivity of solid oxide fuel cell electrolyte from first principles** *JOURNAL OF APPLIED PHYSICS*  
Pornprasertsuk, R., Ramanarayanan, P., Musgrave, C. B., Prinz, F. B.  
2005; 98 (10)
- **Cantilever tip probe arrays for simultaneous SECM and AFM analysis** *10th International Meeting on Chemical Sensors*  
Fasching, R. J., Tao, Y., Prinz, F. B.  
ELSEVIER SCIENCE SA.2005: 964–72
- **Rapid prototyping methods of silicon carbide micro heat exchangers** *PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART B- JOURNAL OF ENGINEERING MANUFACTURE*  
Liu, H. C., Tsuru, H., Cooper, A. G., Prinz, F. B.  
2005; 219 (7): 525-538
- **Capacitive sensor for active tip clearance control in a palm-sized gas turbine generator** *IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT*  
Fabian, T., Prinz, F. B., Brasseur, G.  
2005; 54 (3): 1133-1143
- **Gas-tight alumina films on nanoporous substrates through oxidation of sputtered metal films** *THIN SOLID FILMS*  
Park, Y. I., Cha, S. W., Saito, Y., Prinz, F. B.  
2005; 476 (1): 168-173
- **Design and tuning of a vacuum microplasma spray system: Particle entrainment** *Symposium on Surface Engineering in Materials Science III held at the 2005 TMS Annual Meeting*  
Crawford, W. S., Cappelli, M. A., Prinz, F. B.  
MINERALS, METALS & MATERIALS SOC.2005: 267–282
- **Active water management for proton exchange membrane fuel cells using an integrated electroosmotic pump** *ASME International Mechanical Engineering Congress and Exposition*  
Buie, C. R., Posner, J. D., Fabian, T., Cha, S., Prinz, F. B., Eaton, J. K., Santiago, J. G.  
AMER SOC MECHANICAL ENGINEERS.2005: 243–247
- **Damage in yttria-stabilized zirconia by Xe irradiation measured by X-ray diffraction** *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION B-BEAM INTERACTIONS WITH MATERIALS AND ATOMS*  
Cheng, J., Prinz, F. B.

2005; 227 (4): 577-583

- **The triple phase boundary - A mathematical model and experimental investigations for fuel cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
O'Hayre, R., Barnett, D. M., Prinz, F. B.  
2005; 152 (2): A439-A444
- **A microfabricated intravascular ultrasound scanner for intravascular interventions** *Conference on MOEMS Display and Imaging Systems III*  
Liang, D. H., Park, B. H., Koolwal, A., Prinz, F.  
SPIE-INT SOC OPTICAL ENGINEERING.2005: 115-118
- **The influence of size scale on the performance of fuel cells** *14th International Conference on Solid State Ionics*  
Cha, S. W., O'Hayre, R., Prinz, F. B.  
ELSEVIER SCIENCE BV.2004: 789-95
- **Electrochemical nanopatterning of Ag on solid-state ionic conductor RbAg<sub>4</sub>I<sub>5</sub> using atomic force microscopy** *APPLIED PHYSICS LETTERS*  
Lee, M., O'Hayre, R., Prinz, F. B., Gur, T. M.  
2004; 85 (16): 3552-3554
- **Quantitative impedance measurement using atomic force microscopy** *JOURNAL OF APPLIED PHYSICS*  
O'Hayre, R., Feng, G., Nix, W. D., Prinz, F. B.  
2004; 96 (6): 3540-3549
- **LayTracks: a new approach to automated geometry adaptive quadrilateral mesh generation using medial axis transform** *INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING*  
Quadros, W. R., Ramaswami, K., Prinz, F. B., Gurumoorthy, B.  
2004; 61 (2): 209-237
- **The scaling behavior of flow patterns: a model investigation** *JOURNAL OF POWER SOURCES*  
Cha, S. W., O'Hayre, R., Saito, Y., Prinz, F. B.  
2004; 134 (1): 57-71
- **Analytical and experimental study on noncontact sensing with embedded fiber-optic sensors in rotating metal parts** *JOURNAL OF LIGHTWAVE TECHNOLOGY*  
Li, X. C., Prinz, F.  
2004; 22 (7): 1720-1727
- **Ionic and electronic impedance imaging using atomic force microscopy** *JOURNAL OF APPLIED PHYSICS*  
O'Hayre, R., Lee, M., Prinz, F. B.  
2004; 95 (12): 8382-8392
- **The Air/Platinum/Nafion triple-phase boundary: Characteristics, scaling, and implications for fuel cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
O'Hayre, R., Prinz, F. B.  
2004; 151 (5): A756-A762
- **Scaling Effect in Micro Fuel Cell** *Solid State Ionics*  
Cha, S., W., O'Hayre, R., Prinz, F., B.  
2004; 175: 789-795
- **AC Impedance Investigation of Transport Phenomena in Micro Flow Channels in Fuel Cells**  
Cha, S., W., O'Hayre, R., Prinz, F., B.  
2004
- **Ultra-sharp High-aspect-ratio Probe Array for SECM and AFM Analysis.**  
Tao, Y., Fasching, R., Prinz, F., B.  
2004
- **Fabrication of an electrochemical tip-probe system embedded in SiN<sub>x</sub>-cantilevers for simultaneous SECM and AFM analysis** *Conference on Micromachining and Microfabrication Process Technology IX*  
Fasching, R. J., Tao, Y., Prinz, F. B.  
SPIE-INT SOC OPTICAL ENGINEERING.2004: 53-64

- **Ion irradiation effects in solid oxide fuel cell electrolytes** *Symposium on Materials and Technology for Hydrogen Economy held at the 2003 MRS Fall Meeting*  
Cheng, J., Pornprasertsuk, R., Saito, Y., Prinz, F. B.  
MATERIALS RESEARCH SOCIETY.2004: 225–229
- **RP of Si3N4 burner arrays via assembly mould SDM** *RAPID PROTOTYPING JOURNAL*  
Liu, H. C., Lee, S., Kang, S., Edwards, C. F., Prinz, F. B.  
2004; 10 (4): 239-246
- **Geometric scale effect of flow channels on performance of fuel cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Cha, S. W., O'Hayre, R., Lee, S. J., Saito, Y., Prinz, F. B.  
2004; 151 (11): A1856-A1864
- **Development of portable fuel cell arrays with printed-circuit technology** *JOURNAL OF POWER SOURCES*  
O'Hayre, R., Braithwaite, D., Hermann, W., Lee, S. J., Fabian, T., Cha, S. W., Saito, Y., Prinz, F. B.  
2003; 124 (2): 459-472
- **Lead-time reduction through flexible routing: application to Shape Deposition Manufacturing** *INTERNATIONAL JOURNAL OF PRODUCTION RESEARCH*  
Pinilla, J. M., Prinz, F. B.  
2003; 41 (13): 2957-2973
- **Metal embedded Fiber Bragg Grating sensors in layered manufacturing** *JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME*  
Li, X. C., Prinz, F.  
2003; 125 (3): 577-585
- **Lateral ionic conduction in planar array fuel cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
O'Hayre, R., Fabian, T., Lee, S. J., Prinz, F. B.  
2003; 150 (4): A430-A438
- **Medial axis transform assists path planning in configuration spaces with narrow passages** *International Workshop on Robot Sensing*  
Chang, Y. C., Saha, M., Prinz, F., Latombe, J. C., Pinilla, J. A.  
IEEE.2003: 85–93
- **Micro-Scale Radial-Flow Compressor Impeller Made of Silicon Nitride: Manufacturing and Performance**  
Kang, S., Johnston, James, P., Arima, T., Matsunaga, M., Tsuru, H., Prinz, Fritz, B.  
2003
- **Investigation of transport phenomena in micro flow channels for miniature fuel cells** *1st International Conference on Fuel Cell Science, Engineering and Technology*  
Cha, S. W., Lee, S. J., Park, Y. I., Prinz, F. B.  
AMER SOC MECHANICAL ENGINEERS.2003: 143–148
- **A pencil probe system for electrochemical analysis and modification in nanometer dimensions** *Conference on Smart Sensors, Actuators, and MEMS*  
Fasching, R. J., Tao, Y., Hammerick, K., Prinz, F. B.  
SPIE-INT SOC OPTICAL ENGINEERING.2003: 128–135
- **High-density multi-layer connection technology for MEMS and CMOS applications** *Conference on Smart Sensors, Actuators, and MEMS*  
Bai, S. J., Fasching, R. J., Prinz, F. B.  
SPIE-INT SOC OPTICAL ENGINEERING.2003: 536–542
- **Electrical properties of YSZ thin films deposited on nanoporous substrates** *8th International Symposium on Solid Oxide Fuel Cells*  
Park, Y. I., Saito, Y., Pornprasertsuk, R., Cheng, J., Cha, S. W., Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2003: 169–80
- **Design and fabrication of a micro fuel cell array with "flip-flop" interconnection** *JOURNAL OF POWER SOURCES*  
Lee, S. J., Chang-Chien, A., Cha, S. W., O'Hayre, R., Park, Y. I., Saito, Y., Prinz, F. B.  
2002; 112 (2): 410-418
- **Processing and microstructures of fiber Bragg grating sensors embedded in stainless steel** *METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE*



- 
- Li, X. C., Johnsen, J., Groza, J., Prinz, F.  
2002; 33 (9): 3019-3024
- **Rapid prototyping and manufacturing by gelcasting of metallic and ceramic slurries** *MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING*  
Stampfl, J., Liu, H. C., Nam, S. W., Sakamoto, K., Tsuru, H., KANG, S. Y., Cooper, A. G., Nickel, A., Prinz, F. B.  
2002; 334 (1-2): 187-192
  - **A sharp peak in the performance of sputtered platinum fuel cells at ultra-low platinum loading** *JOURNAL OF POWER SOURCES*  
O'Hayre, R., Lee, S. J., Cha, S. W., Prinz, F. B.  
2002; 109 (2): 483-493
  - **Capacitive blade tip clearance measurements for a micro gas turbine** *19th IEEE Instrumentation and Measurement Technology Conference (IMTC/2002)*  
Fabian, T., Kang, S., Prinz, F., Brasseur, G.  
IEEE.2002: 1011-1015
  - **Fabrication of ceramic components for micro gas turbine engines**  
Liu, H., C., Stampfl, J., Kang, S., Prinz, F., B.  
2002
  - **Thermal stresses and deposition patterns in layered manufacturing** *MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING*  
Nickel, A. H., Barnett, D. M., Prinz, F. B.  
2001; 317 (1-2): 59-64
  - **Thermal behavior of a metal embedded fiber Bragg grating sensor** *SMART MATERIALS & STRUCTURES*  
Li, X. C., Prinz, F., Seim, J.  
2001; 10 (4): 575-579
  - **Miniature fuel cells with non-planar interface by microfabrication** *Symposium on Power Sources for the New Millennium*  
Lee, S. J., Cha, S. W., O'Hayre, R., Chang-Chien, A., Prinz, F. B.  
ELECTROCHEMICAL SOCIETY INC.2001: 67-76
  - **A novel miniaturized sensor for carbon dioxide dissolved in liquids** *Journal of Sensors and Actuators B*  
Prinz, F., B., Fasching, R., Keplinger, F., Hanreich, G., Jobst, G., Urban, G.  
2001; 3987: 1-7
  - **Skeletons for representation and reasoning in engineering applications** *ENGINEERING WITH COMPUTERS*  
Quadros, W. R., Gurumoorthy, B., Ramaswami, K., Prinz, F. B.  
2001; 17 (2): 186-198
  - **Scalable rotary actuators with embedded Shape Memory Alloys** *Smart Structures and Materials 2001 Conference*  
Park, B. H., Shantz, M., Prinz, F.  
SPIE-INT SOC OPTICAL ENGINEERING.2001: 79-87
  - **Part strength improvement in polymer shape deposition manufacturing** *RAPID PROTOTYPING JOURNAL*  
Kietzman, J., Park, B. H., Prinz, F.  
2001; 7 (3): 130-137
  - **Medial Axis Transform (MAT) of general 2D shapes and 3D polyhedra for engineering applications** *IFIP TC5/WG5 2 6th International Workshop on Geometric Modelling*  
Chang, Y. C., Kao, J. H., Pinilla, J. M., Dong, J., Prinz, F. B.  
KLUWER ACADEMIC PUBLISHERS.2001: 37-52
  - **Does integrated-circuit fabrication show the path for the future of mechanical manufacturing?** *MRS BULLETIN*  
Prinz, F. B., Golnas, A., Nickel, A.  
2000; 25 (10): 32-35
  - **Mechanical and thermal expansion behavior of laser deposited metal matrix composites of Invar and TiC** *MATERIALS SCIENCE AND ENGINEERING A-STRUCTURAL MATERIALS PROPERTIES MICROSTRUCTURE AND PROCESSING*  
Li, X. C., Stampfl, J., Prinz, F. B.
-

2000; 282 (1-2): 86-90

- **Electro-discharge machining of mesoscopic parts with electroplated copper and hot-pressed silver tungsten electrodes** *JOURNAL OF MICROMECHANICS AND MICROENGINEERING*  
Stampfl, J., Leitgeb, R., Cheng, Y. L., Prinz, F. B.  
2000; 10 (1): 1-6
- **Shape Deposition Manufacturing of smart metallic structures with embedded sensors** *Smart Structures and Materials 2000 Conference*  
Li, X. C., Golnas, A., Prinz, F.  
SPIE-INT SOC OPTICAL ENGINEERING.2000: 160–171
- **Application of the Mold SDM process to the fabrication of ceramic parts for a micro gas turbine engine.**  
Kang, S., Stampfl, J., Cooper, A., G., Prinz, F.  
edited by Heinrich, J., G.  
2000
- **Mesoscopic Assemblies with SDM Processing**  
Park, B., H., Prinz, F., B.  
2000
- **Fabrication of ceramic parts for a miniature jet engine application using Mold SDM.** *In: Innovative Processing and Synthesis of Ceramics, Glasses and Composites III*  
Cooper, A., G., Kang, S., Stampfl, J., Prinz, F., B.  
Ceramic Transactions.2000: 389–398
- **Fabrication of Turbine-Compressor-Shaft Assembly for Micro Gas Turbine Engine** *Master thesis, December*  
Prinz, F., Schilp, H.  
2000
- **A novel miniaturized sensor for carbon dioxide dissolved in liquids**  
Prinz, F., B., Fasching, R., Keplinger, F., Hanreich, G., Jobst, G., Urban, G.  
2000
- **High Power-Density Polymer-Electrolyte Fuel Cells by Microfabrication. In: Micro Power Sources**  
Lee, S., J., Cha, S., W., Liu, Y., C., O'Hayre, R., Prinz, F., B.  
edited by Zaghbi, K., Surampudi, S.  
2000
- **mMold Shape Deposition Manufacturing**  
Nam, S., W., Liu, H., C., Stampfl, J., Kang, S., Prinz, F., B.  
2000
- **Micromachined Semiconductor Flow Sensor**  
Prinz, F., B., Kohl, F., Fasching, R., Glanninger, A., Jachimowicz, A., Chabicovsky, R.  
2000
- **Thermal analysis of new silicon-based substrates**  
Prinz, F., B., Hanreich, G., Nicolics, J., Fasching, R.  
2000
- **Rapid prototyping of mesoscopic devices** *3rd International Micro Materials Conference*  
Stampfl, J., Liu, H. C., Nam, S. W., Kang, S., Prinz, F. B.  
DDP GOLDENBOGEN SIGURD GOLDENBOGEN.2000: 1073–1078
- **Compact graph representation for Solid Freeform Fabrication (SFF)** *JOURNAL OF MANUFACTURING SYSTEMS*  
Pinilla, J. M., Kao, J. H., Prinz, F.  
2000; 19 (5): 341-354
- **mu-Mold Shape Deposition Manufacturing of ceramic parts** *Symposium on Solid Freeform and Additive Fabrication*  
Nam, S. W., Stampfl, J., Liu, H. C., Kang, S., Prinz, F. B.

MATERIALS RESEARCH SOCIETY.2000: 187–192

- **Automated fabrication of complex molded parts using mold shape deposition manufacturing** *MATERIALS & DESIGN*  
Cooper, A. G., Kang, S., Kietzman, J. W., Prinz, F. B., Lombardi, J. L., Weiss, L. E.  
1999; 20 (2-3): 83-89
- **Expanding the design space through innovative design and manufacturing processes** *3rd International Workshop on Cooperative Knowledge Processing for Engineering Problem Solving*  
Prinz, F. B.  
KLUWER ACADEMIC PUBLISHERS.1999: 373–406
- **Mikrostrukturierung von Funktions- und Strukturwerkstoffen mittels plasmageätzten Siliziums**  
Stampfl, J., Leitgeb, R., Cheng, Y., L., Prinz, F., B.  
edited by Kempfer, K., Hausselt, J.  
Werkstoffwoche 98, München.1999
- **Design and fabrication of materials for Laser Shape Deposition Manufacturing**  
Li, X., C., Stampfl, J., Prinz, F., B.  
edited by Cohen et al., L., J.  
1999
- **Graph based process planning for Mold Shape Deposition Manufacturing**  
Cooper, A., G., Pinilla, J., M., Kao, J., Prinz, F., B.  
1999
- **Novel Technologies for the Assembling of ASIC's and MEMS, Current Developments of Microelectronics, Seminar organized by the society for microelectronics** *in Bad Hofgastein, Salzburg*  
Prinz, F., B., Fasching, R., Keplinger, F., Kohl, F.  
1999; 3 (45): 3-6
- **Impact of axial and radial rotor offset on the measurement error of a capacitive angular-position sensor with modified front-end topology,***Instrumentation and Measurement Technology Conference,IMTC/99.*  
Prinz, F., B., Fabian, T., Brasseur, G., Hauser, H.  
1999
- **The Mesicopter: A Meso-Scale Flight Vehicle** *NIAC Phase I Final Report*  
Kroo, I., Prinz, F., Leitgeb, R., Cheng, Y., L.  
1999
- **Additive/subtractive material processing for mesoscopic parts** *10th Solid Freeform Fabrication Symposium (SFF)*  
Cheng, Y. L., Stampfl, J., Leitgeb, R., Prinz, F. B.  
UNIV TEXAS AUSTIN.1999: 687–694
- **Automated layer decomposition for additive/subtractive Solid Freeform Fabrication** *10th Solid Freeform Fabrication Symposium (SFF)*  
Chang, Y. C., Pinilla, J. M., Kao, J. H., Dong, J., Ramaswami, K., Prinz, F. B.  
UNIV TEXAS AUSTIN.1999: 111–119
- **Automated planning for material shaping operations in additive/subtractive Solid Freeform Fabrication** *10th Solid Freeform Fabrication Symposium (SFF)*  
Dong, J. P., Kao, J. H., Pinilla, J. M., Chang, Y. C., Prinz, F. B.  
UNIV TEXAS AUSTIN.1999: 121–128
- **Reducing part: Deformation by inducing phase transformation** *10th Solid Freeform Fabrication Symposium (SFF)*  
Link, G., Huntley, T., Nickel, A., Leitgeb, R., Nguyen, T., Prinz, F.  
UNIV TEXAS AUSTIN.1999: 727–734
- **Residual stresses in layered manufacturing** *10th Solid Freeform Fabrication Symposium (SFF)*  
Nickel, A., BARNETT, D., Link, G., Prinz, F.  
UNIV TEXAS AUSTIN.1999: 239–246
- **Fabrication of high quality ceramic parts using mold SDM** *10th Solid Freeform Fabrication Symposium (SFF)*  
Kang, S., Cooper, A. G., Stampfl, J., Prinz, F., Lombardi, J., Weiss, L., Sherbeck, J.

---

UNIV TEXAS AUSTIN.1999: 427–434

- **Shape deposition manufacturing with microcasting: Processing, thermal and mechanical issues** *JOURNAL OF MANUFACTURING SCIENCE AND ENGINEERING-TRANSACTIONS OF THE ASME*  
Amon, C. H., Beuth, J. L., Weiss, L. E., Merz, R., Prinz, F. B.  
1998; 120 (3): 656-665
- **Material strength in polymer shape deposition manufacturing** *9th Solid Freeform Fabrication (SFF) Symposium*  
Kietzman, J. W., Prinz, F. B.  
UNIV TEXAS AUSTIN.1998: 567–574
- **INTEGRATED DESIGN AND RAPID MANUFACTURING OVER THE INTERNET**  
Prinz, F., B., Rajagopalan, S., Pinilla et al., J., M.  
1998
- **Medial axis transform (MAT) of general 2D shapes and 3D polyhedra for engineering applications**  
Chang, Y. -C., Kao, J. -H., Pinilla, J., M., Dong, J., Prinz, F., B.  
1998
- **Vergleich und Optimierung der Ansteuerverfahren eines kapazitiven Winkel- und Winkelgeschwindigkeitssensors** *Master Thesis, Vienna University of Technology*  
Prinz, F., B., Fabian, T.  
1998
- **TRADEWIND: A Prototype Internet Marketplace for Solid Free-form Fabrication** *ASME DETC/CIE Conference, Atlanta, GA*  
Prinz, F., B., Tan, S., Pinilla et al., J., M.  
1998
- **Mesicopter: A Meso-Scale Flight Vehicle for Atmospheric Sensing** *Phase1 Proposal*  
Kroo, I., Prinz, F., Murphy, B.  
1998
- **Silicon microtechnology for thermal sensors** *e&i*  
Prinz, F., B., Kohl, F., Fasching, R., Urban, G., Steurer, J., Olcaytug, F.  
1998; 115: 391
- **A measurement algorithm for capacitive speed encoder with a modified front-end topology**, *Instrumentation and Measurement IEEE Transactions on*  
Prinz, F., B., Fabian, T., Brasseur, G.  
1998; 47 (5): 1341 - 1345
- **Material Strength in Polymer Shape Deposition Manufacturing** *Proceedings of the Solid Freeform Fabrication Symposium University of Texas at Austin, Austin, Texas, August*  
Kietzman, J., W., Prinz, F., B.  
1998: 567-574
- **Optimal motion planning for deposition in layered manufacturing**  
Kao, J., H., Prinz, F., B.  
1998
- **A robust capacitive angular speed sensor**, *Instrumentation and Measurement IEEE Transactions on*  
Prinz, F., B., Fabian, T., Brasseur, G.  
1998; 47 (1): 280 - 284
- **Automated fabrication of complex molded parts using mold SDM** *9th Solid Freeform Fabrication (SFF) Symposium*  
Cooper, A. G., Kang, S., Kietzman, J. W., Prinz, F. B., Lombardi, J. L., Weiss, L.  
UNIV TEXAS AUSTIN.1998: 721–728
- **Thin film thermo-mechanical sensors embedded in metallic structures** *6th International Symposium on Trends and New Applications of Thin Films (TATF 98)*  
Golnas, T., Prinz, F. B.  
TRANS TECH PUBLICATIONS LTD.1998: 201–204

- **Process planning and automation for additive-subtractive solid freeform fabrication** *9th Solid Freeform Fabrication (SFF) Symposium*  
Pinilla, J. M., Mao, J. H., Prinz, F. B.  
UNIV TEXAS AUSTIN.1998: 247–257
- **Rapid tooling die cast inserts using shape deposition manufacturing** *MATERIALS AND MANUFACTURING PROCESSES*  
Link, G. R., Fessler, J., Nickel, A., Prinz, F.  
1998; 13 (2): 263-274
- **Functional gradient metallic prototypes through shape deposition manufacturing** *8th Solid Freeform Fabrication (SFF) Symposium*  
Fessler, J., Nickel, A., Link, G., Prinz, F., FUSSELL, P.  
UNIV TEXAS AUSTIN.1997: 521–528
- **The Compact Graph Format: An Interchange Standard for Solid Freeform Fabrication.** *NIST workshop on Rapid Prototyping, Maryland, NIST*  
Pinilla, J., M., Kao, J., H., Prinz, F., B.  
1997
- **Surface modification of platinum thin film electrodes towards a defined roughness and microporosity** *Journal of Electroanalytical Chemistry.*  
Prinz, F., B., Aschauer, E., Fasching, R., Varahram, M., Jobst, G., Urban, G.  
1997; 426: 157-165
- **Application of cylindrical electro-magnetrons for glow discharge deposition of amorphous carbon and amorphous carbon/germanium films**  
Prinz, F., B., Fasching, R., Olcaytug, F., Schalko, J., Ebel, H., Gazicki, M.  
1997
- **Layered manufacturing material issues for SDM of polymers and ceramics** *8th Solid Freeform Fabrication (SFF) Symposium*  
Kietzman, J. W., Cooper, A. G., Weiss, L. E., Schultz, L., Lombardi, J. L., Prinz, F. B.  
UNIV TEXAS AUSTIN.1997: 133–140
- **Box-skeletons of discrete solids** *COMPUTER-AIDED DESIGN*  
Sudhalkar, A., Gursoz, L., Prinz, F.  
1996; 28 (6-7): 507-517
- **Rapid design and manufacture of wearable computers** *COMMUNICATIONS OF THE ACM*  
Finger, S., Terk, M., Subrahmanian, E., Kasabach, C., Prinz, F., Siewiorek, D. P., Smailagic, A., Stivoric, J., Weiss, L.  
1996; 39 (2): 63-70
- **Collision avoidance using asynchronous teams** *IEEE International Conference on Robotics and Automation*  
Kao, J. H., HEMMERLE, J. S., Prinz, F. B.  
IEEE.1996: 1093–1100
- **Miniaturisierte, integrierte Biosensoren für Glucose- und Lactat - Monitoring.** *Multisensorikpraxis*  
Prinz, F., B., Aschauer, E., Fasching, R., Jobst, G., Varahram, M., Svasek, P.  
edited by Ahlers, H.  
Springer-Verlag, Berlin.1996: 1
- **Numerical and Experimental Investigation of Interface Bonding Via Substrate Remelting of an Impinging Molten Metal Droplet** *ASME Journal of Heat Transfer*  
Amon, C., H., Schmaltz, K., S., Merz, R., Prinz, F., B.  
1996; 118 (1): 164-172
- **Laser deposition of metals for shape deposition manufacturing** *7th Solid Freeform Fabrication (SFF) Symposium*  
Fessler, J. R., Merz, R., Nickel, A. H., Prinz, F. B., Weiss, L. E.  
UNIV TEXAS AUSTIN.1996: 117–124
- **Entwicklung elektrochemischer Dünnschicht CO2-Sensoren, Grundlagen und Technologie elektronischer Bauelemente** *Fortbildungsseminar der Gesellschaft für Mikroelektronik in Großarl*  
Prinz, F., B., Fasching, R., Aschauer, E., Jobst, G., Moser, I., Urban, G.  
1995: 7-10.
- **Processing, Thermal and Mechanical Issues in Shape Deposition Manufacturing**

- Prinz, F., B., Weiss, L., Amon, C., Beuth, J.  
1995
- **CNC Cutter Path Generation in Shape Deposition Manufacturing**  
Ramaswami, K., Prinz, F., B.  
1995
  - **Miniaturized carbon dioxide sensors**  
Prinz, F., B., Fasching, R., Aschauer, E., Urban, G.  
1995
  - **Surface characterization of thin film platinum electrodes applied for biosensors by means of cyclic voltammetry and laser - SNMS.** *Journal of Electroanalytical Chemistry.*  
Prinz, F., B., Aschauer, E., Fasching, R., Urban, G., Nicolussi, G., Husinsky, W.  
1995; 381: 143-152
  - **Two types of electrochemical thin-film pCO<sub>2</sub>-sensors for in vitro and in vivo applications.**  
Prinz, F., B., Fasching, R., Aschauer, E., Jobst, G., Urban, G.  
1994
  - **Robot-Assisted Shape Deposition Manufacturing**  
Hartmann, K., Krishnan, R., Merz, R., Neplotnik, G., Prinz, F., Schultz, L.  
1994
  - **Creating an Advanced Collaborative Open Resource Network**  
Coyne, R., Finger, S., Konda, S., Prinz, F., B., Siewiorek, Daniel, P., Subrahmanian, E.  
1994
  - **Miniaturized integrated biosensors.** *Technology and Health Care.*  
Prinz, F., B., Urban, G., Jobst, G., Keplinger, F., Aschauer, E., Fasching, R.  
1994: 1: 215 - 218
  - **Thermal Modelling and Experimental Testing of MD\* Spray Shape Deposition Processes**  
Amon, C., H., Merz, R., Prinz, F., B., Schmaltz, K., S.  
1994
  - **Shape Deposition Manufacturing**  
Merz, R., Prinz, F., B., Ramaswami, K., Terk, M., Weiss, L.  
1994
  - **Electrochemical thin-film carbondioxide sensors on novel polymer membrane system for in vitro and in vivo applications.**  
Prinz, F., B., Fasching, R., Jobst, G., Keplinger, F., Aschauer, E., Urban, G.  
1993
  - **Material Issues in Layered Forming**  
Amon, C., Beuth, J., Kirchner, H., Merz, R., Prinz, F., Schmaltz, K.  
1993
  - **Miniaturisierte Dünnschicht-Blutgassensoren für die in vivo und ex vivo Diagnostik.** *Biomedizinische Technik. Band 57; Ergänzungsband*  
Prinz, F., B., Fasching, R., Urban, G., Aschauer, E., Jachimowicz, A., Kohl, F.  
1992: 1: 161 - 163
  - **Integrated miniaturized biosensors for clinical analyzers and in vivo applications.**  
Prinz, F., B., Urban, G., Jobst, G., Keplinger, F., Aschauer, E., Fasching, R.  
1992
  - **pH-sensors for in vivo applications.**  
Prinz, F., B., Fasching, R., Keplinger, F., Aschauer, E., Urban, G.  
1992

- **Miniaturized multi-enzyme biosensors integrated with pH-Sensors on flexible polymer carriers for in vivo applications.** *Biosensors and Bioelectronics.*  
Prinz, F., B., Fasching, R., Kohl, F., Urban, G., Jobst, G., Keplinger, F.  
1992: 7: 733 - 739.
- **Laser-SNMS depth profiling of thin film multilayers: study of a Pt-Ti biosensor for glucose detection.**  
Prinz, F., B., Fasching, R., Husinsky, W., Urban, G., Betz, G., Aschauer, E.  
1991