GERBRAND CEDER
Chancellor's Professor of Materials Science and Engineering
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Role in Center: EFRC Chief Theorist
Current Affiliation: U.C. Berkeley

Appointments

July 1 2015-	Chancellor's Professor, University of California Berkeley
July 1 2015-	Faculty Senior Scientist, Lawrence Berkeley National Laboratory
July 1, 2015-	Visiting Professor, Massachusetts Institute of Technology
2000-2015	Professor, Massachusetts Institute of Technology
1995-2000	Associate Professor, Massachusetts Institute of Technology
1991-1995	Assistant Professor, Massachusetts Institute of Technology
1989	Teaching Assistant, University of California, Berkeley

Professional Preparation

1991	Ph.D. Materials Science and Engineering, University of California, Berkeley
1988	Metallurgy/Applied Materials Science Engineer, University of Leuven, Belgium

Awards and Honors

Fellow Royal Flemish Academy of Arts and Sciences (2016); MRS Fellow (Class of 2015); Fellow Singapore-MIT Alliance (1999-2006); TMS Morris Cohen Award (2016); Alexander M Cruickshank Award (Gordon Conferences 2015); MRS Gold Medal (2009); Battery Research Award, ECS (2004); TMS Robert Lansing Hardy Award (1996): given to a person under 30 years of age who shows exceptional promise for a successful career Calphad Best Paper Award (2006); CAREER Award, NSF (1995); Charles Reed Faculty Initiative Award, MIT (1993); André Deruyttere Prize for best publication (1992); AT&T New Research Award (1992); Teaching Awards: Graduate Teaching Award, MIT School of Engineering (2007); Graduate Council Teaching Award (2006); Best Graduate Teaching Award, MIT (2003); Fellow of the Belgian-American Educational Foundation; Proctor and Gamble Technical Thesis Award (1988).

Scientific Activities

Founding Director of the Samsung-MIT-Berkeley Program on Materials For Energy Applications (2011). Co-director of the Materials Project. Founder, Pellion Tech: A start-up company that uses high-throughput computational materials science techniques to design Mg-intercalation cathodes for high energy density storage; Co-Founder, Materials Project (www.materialsproject.org); Founder, Computational Modeling Consultants; Developed webcast Graduate Subject in Computational Materials Science, freely available in multi-media format since November 2005. http://ocw.mit.edu. *Look for course 3.320.* Receives over 15,000 unique hits per quarter; Served as a member of the American Physical Society's study on Critical Elements for Energy Technologies, and as Sub-Panel leader, DOE workshop on Basic Science Needs for Energy Storage (April 2007). Screening Editor for Science (BORE), 2005-2010; Editorial Board Chemistry of Materials (2010-2015). **Patents:** About 25 filed or issued patents.

Publications

- Kitchaev, Daniil A., Haowei Peng, Yun Liu, Jianwei Sun, John P. Perdew, and Gerbrand Ceder. "Energetics of MnO 2 polymorphs in density functional theory." Physical Review B 93.4 (2016): 045132.

- Sun, Wenhao, S. Jayaraman, W. Chen, K. Persson, G. Ceder. "Nucleation of metastable aragonite CaCO3 in seawater." *Proceedings of the National Academy of Sciences* 112.11 (2015): 3199-3204.
- X. Li, X. Ma, D. Su, L. Liu, R. Chisnell, S-P. Ong, H. Chen, A. Toumar, J-C. Idrobo, Y. Lei, J. Bai, F. Wang, J. W. Lynn, Y. S. Lee, G. Ceder, "Direct Visualization of the Jahn-Teller Effect Coupled to Na Ordering in Na5/8MnO2," Nature Materials **6**, 586-592 (2014).
- K. Persson, G. Ceder, "World Changing Ideas," Scientific American **309**(6), 34-40 (2013).
- J. Lee, A. Urban, X. Li, D. Su, G. Hautier, G. Ceder, "Unlocking the Potential of Cation-Disordered Oxides for Rechargeable Lithium Batteries," Science **343** (6170), 519-522 (2014).
- A. Jain, S.P. Ong, G. Hautier, W. Chen, W.D. Richards, S. Dacek, S. Cholia, D. Gunter, D.
- Skinner, G. Ceder, K.A. Persson, "Commentary: The Materials Project: A Materials Genome Approach to Accelerating Materials Innovation," APL Materials **1**, 011002, 1–11 (2013).
- K. Persson, B. Waldwick, P. Lazic, G. Ceder, "Prediction of Solid-Aqueous Equilibria: Scheme to Combine First-Principles Calculations of Solids with Experimental Aqueous States," Physical Review B **85**, 235438 (2012).
- K. Kang, Y.S. Meng, J. Bréger, C. Grey, G. Ceder, "Electrodes with High Power and High
- Capacity for Rechargeable Li Batteries," J. Science **311**, 977–980 (2006).
- B. Kang, G. Ceder, "Battery Materials for Ultrafast Charging and Discharging," Nature
- **458**, 7235, 190–193 (2009).
- G. Hautier, A. Miglio, G. Ceder, G-M Rignanese, X. Gonze, "Identification and Design Principles of Low Hole Effective Mass P-type Transparent Conducting Oxides," Nature Communications **4**, 2292 (2013).
- F. Zhou, T. Maxisch, G. Ceder, "Configurational Electronic Entropy and the Phase
- Diagram of Mixed-Valence Oxide: The Case of LixFePO4," Physical Review Letters **97**,
- 155704 (2006).
- R. Malik, F. Zhou, G. Ceder, Kinetics of Non-Equilibrium Lithium Incorporation in LiFePO4, Nature Materials **10** (8), 587 (2011).
- C. Fischer, K. Tibbetts, D. Morgan, G. Ceder, "Predicting Crystal Structure: Merging Data Mining with Quantum Mechanics," Nature Materials **5** (8), 641 (2006).
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Professional Organizations and Service: Member of MRS, ACS, TMS, ECS; Served as Member of Award Committees: Von Hippel Award (MRS); Battery Research Award (ECS), TMS Environmental Award (TMS), Rahman price (APS); Regular organizer of symposia at ECS, MRS and TMS. Member Editorial Board Chemistry of Materials (2010-2015), Editorial Board New Journal of Physics.