

Said Al-Hallaj, PhD
Visiting Research Professor
Department of Chemical Engineering
University of Illinois at Chicago
sah@uic.edu
EIB 270
929 W. Taylor Street
Chicago, IL 60607-7022

Research Interest

Renewable Energy
Li-ion Batteries
Safety and Thermal Management of Li-ion batteries
Thermal Energy Storage
Engineering and Entrepreneurship

Courses Offered

ChE 451 “Renewable Energy Technologies” (Fall semester)
ChE 451 “Entrepreneurship in Engineering” (Fall Semester)

Education

Jordan University of Science and Technology, Jordan, B.Sc. Chemical Engineering, 1985-1990
Jordan University of Science and Technology, Jordan, M.Sc. Chemical Engineering, 1991-1994
Illinois Institute of Technology, Chicago, IL, USA, PhD Chemical Engineering, 1995-1999

Research and Professional Experience

9/10-now Visiting Research Professor, Department of Chemical Engineering, University of Illinois at Chicago, Chicago, IL
6/14-now Founder/CEO NETenergy (UIC thermal energy storage Startup), Chicago, IL
3/22-now Chief Battery Scientist, Beam Global (NYSE: BEEM), (acquired AllCell Technologies)
9/08-7/20 Chairman/CEO, All Cell Technologies LLC, Chicago, IL
5/00-5/09 Research Professor, Department of Chemical and Biological Engineering, Coordinator of IIT Renewable Energy Programs, IIT, Chicago, IL
3/99-9/99 Associate Visiting Researcher, Department of Applied Chemistry, College of Engineering, Tohoku University, Sendai, Japan: thermal characterization and calorimetric studies for Li-battery research.

Selected Publications (>13,000 citations)

- 1- R.J. Clark, G. Gholamibozanjani, J. Woods, S. Kaur, A. Odukamaiya, S. Al-Hallaj, M. Farid, “Experimental screening of salt hydrates for thermochemical energy storage for building heating application”, *Journal of Energy Storage*, 51, PP 104415, 2022
- 2- A Goyal, E. Kozubal, J. Woods, M. Nofal, S. Al-Hallaj, “Design and performance evaluation of a dual-circuit thermal energy storage module for air conditioners”, *Applied Energy* 292, 116843, 2021

- 3- ST Plunkett, C Chen, R Rojaee, P Doherty, YS Oh, Y Galazutdinova, S. Al-Hallaj, “Enhancing thermal safety in lithium-ion battery packs through parallel cell ‘current dumping’ mitigation” *Applied Energy* 286, 116495, 2021
- 4- C Chen, S Plunkett, M Salameh, S Stoyanov, S Al-Hallaj, M Krishnamurthy, “Enhancing the Fast Charging Capability of High-Energy-Density Lithium-Ion Batteries: A Pack Design Perspective”; *IEEE Electrification Magazine* 8 (3), 62-69, 2020
- 5- R Amine, A Daali, X Zhou, X Liu, Y Liu, Y Ren, X Zhang, L Zhu, S Al-Halla, “A practical phosphorus-based anode material for high-energy lithium-ion batteries”, *Nano Energy*, 104849, 2020
- 6- A. Aljehani, S. A. K. Razack, L. Nitsche, S. Al-Hallaj, “Numerical modeling of transient heat transfer in a phase change composite thermal energy storage (PCC-TES) system for air conditioning applications”, *Applied Thermal Engineering* 164, 114522, 2020
- 7- S Cook, Monica and Al-Hallaj, “Film-based optical elements for passive solar concentration in a BIPV window application”, *Solar Energy* 180, 226-242, 2019
- 8- S Al-Hallaj, G Wilk, G Crabtree, M Eberhard, “ Overview of distributed energy storage for demand charge reduction”, *MRS Energy & Sustainability*, 2018
- 9- S. Al-Hallaj, S. Wilke, B. Schweitzer, “Chapter 2: Energy Storage Systems for Smart Grid Applications”, *The Triangle: Energy-Water-Food Nexus for Sustainable Security in the Arab Middle East’* Editors: A. Badran and S. Murad, Springer Publishing, in publication
- 10- S. Al-Hallaj and K. Kiszynski, “Hybrid Hydrogen Systems for Stationary and Transportation Applications”, 1st Edition, 2011, Springer Publishing, ISBN 978-1-84628-466-3

Selected Patents

- 1- US 11,050,101, June 2021, S Al-Hallaj, M Salameh, S Razack, B Schweitzer, S Wilke, “Thermal state of charge estimation of phase change material (PCM) in a battery pack with a PCM thermal management system”
- 2- US 10,597,569, March 2020, SAK Razack, MF Alzoubi, K Cloutier, S Al-Hallaj, “Flexible phase change material composite for thermal management systems”
- 3- US 9,784,509, October 2017, S Al-Hallaj, S Murad, “Optimized heating and cooling system”
- 4- US 8,109,324 B2, February 7, 2012, M. M. Farid and Said Al-Hallaj, “Microchannel heat exchanger with micro-encapsulated phase change material for high flux cooling”
- 5- US 8,273,474 B2, September 25, 2012, Said Al-Hallaj and J. R. Selman, “Battery thermal management system”

Awards and Honors

- Illinois Tech Alumni Professional Achievement Award, 2022
- Advisory Board member, Armour College of Engineering, Illinois Tech
- Shell GameChanger Accelerator Powered by NREL (GCxN) 2019
- Wells Fargo Innovation Incubator (IN2), USDOE National Renewable Energy Lab, 2016
- New Venture Challenge, 2nd place, Booth School of Business, University of Chicago, 2015
- Clean Energy Challenge, 1st place award, 2015
- Chicago Magazine 2012 Green Award
- Embassy of France, Young Entrepreneur Initiative Award (YEI), 2007