

Taylor Bryan Harvey

Chancellor's Assistant Professor of Research
Regional Director for Central Texas - Texas A&M Engineering Experiment Station (TEES)
Texas A&M Site Co-Director - NSF I/UCRC on Next Generation Photovoltaics

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Education

Ph.D. Chemical Engineering, 2014
University of Texas at Austin, Austin, TX
Advisor: Dr. Brian Korgel
Dissertation: Sintering of Cu(In,Ga)Se₂ Nanocrystal Films for Photovoltaics

B.S. Chemical Engineering, Magna Cum Laude, 2006
Brigham Young University, Provo, UT

Work Experience

Chancellor's Assistant Professor of Research, Texas A&M University - Central Texas, Killeen Texas
Sep 2016 – Current

Co-Founder and CEO/CTO, Lucelo Technologies, Austin Texas
May 2016 – Feb 2017 (CEO), Mar 2014 – May 2016 (CTO)

Reservoir Engineer, Delta Petroleum Company, Denver, Colorado
Aug 2008 – Sept 2010

Reservoir Engineer, ExxonMobil Development Company, Houston, Texas
May 2006 – Aug 2008

Publications

Siegler, T.D.; Zhang Y.; Dolocan, A.; Reimnitz, L.C.; Torabi, A.; Abney, M. K.; Choi, J.; Cossio, G.; Houck, D.W.; Yu, E.T.; Li, X.; **Harvey, T.B.**; Milliron, D.J.; Korgel, B.A., "Addition of Monovalent Silver Cations to CH₃NH₃PbBr₃ Produces Crystallographically Oriented Perovskite Thin Films," *ACS Appl. Energy Mater.* (2019), ASAP.

Harvey, T. B.; Bonafe, F.; Updegrave, T.; Reddy, V.; Thomas, C.; Kamarajugadda, S.; Stolle, C. J.; Pernik, D. R.; Du, J.; Korgel, B. A., "Uniform Selenization of Crack-Free Films of Cu(In,Ga)Se₂ Nanocrystals." *ACS Appl. Energy Mater.* (2019), 2 (1), 736-742.

Voggu, V. R.; Sham, J.; Pfeffer, S.; Pate, J.; Phillip, L.; **Harvey, T. B.**; Brown, R.M.; Korgel, B.A., "Flexible CuInSe₂ Nanocrystal Solar Cells on Paper." *ACS Energy Letters* (2017), 2 (3), 574-581.

Stolle, C. J.; **Harvey, T. B.**; Korgel, B. A., "Photonic Curing of Ligand-Capped CuInSe₂ Nanocrystal Films." *40th IEEE Photovoltaic Specialist Conference (PVSC)* (2014), 0270-0274.

Stolle, C.J.; **Harvey, T.B.**; Pernik, D.R.; Hibbert, J. I.; Du, J.; Rhee, D.J.; Akhavan, V.A.; Schaller, R.D.; Korgel, B.A., "Multiexciton Solar Cells of CuInSe₂ Nanocrystals" *J. Phys. Chem. Lett.* (2014), 5, 304-309.

Harvey, T.B.; Mori, I.; Stolle, C.J.; Bogart, T.; Ostrowski, D.P.; Glaz, M.S.; Du, J.; Pernik, D.; Akhavan, V. A.; Vanden Bout, D.A.; Korgel, B.A., "Multistep Selenization of Copper Indium Gallium Selenide (CIGS) Nanocrystal Photovoltaics" *ACS Appl. Mater. Interfaces* (2013), 5, 9134-9140.

Panthani, M.G.; Stolle, C.J.; Reid, D.K.; Rhee, D.J.; **Harvey, T.B.**; Akhavan, V.A.; Yu, Y.; Korgel, B.A., "CuInSe₂ Quantum Dot Solar Cells with High Open-Circuit Voltage" *J. Phys. Chem. Lett.* (2013), 4 (12), 2030-2034.

Stolle, C. J.; **Harvey, T.B.**; Korgel, B.A., "Nanocrystal Photovoltaics: A Review of Recent Progress" *Current Opinion in Chemical Engineering* (2013), 2 (2), 160-167.

- Akhavan, V. A; **Harvey, T.B.**; Stolle, C.J.; Ostrowski, D.P.; Glaz, M.S.; Goodfellow, B.W.; Panthani, M.G.; Reid, D.K.; Vanden Bout, D.A.; Korgel, B.A., "Influence of Composition on the Performance of Sintered Cu(In,Ga)Se₂ (CIGS) Nanocrystal Thin Film Photovoltaic Devices" *ChemSusChem* 6 (2013) 481-486.
- Steinhagen, C.; **Harvey, T.B.**; Stolle, C. J.; Harris, J.; Korgel, B.A., "Pyrite Nanocrystal Solar Cells: Promising or Fool's Gold?" *Journal of Physical Chemistry Letters* (2012), 3, 2352-2356.
- Stolle, C. J.; Panthani, Matthew G.; **Harvey, T.B.**; Akhavan, V.A.; Korgel, B.A., "Comparison of the Photovoltaic Response of Oleylamine and Inorganic Ligand-Capped CuInSe₂ Nanocrystals" *ACS Appl. Mater. Interfaces* (2012), 4(5), 2757-2761.
- Akhavan, V.A.; Goodfellow, B.W.; Panthani, M.G.; Steinhagen, C.; **Harvey, T.B.**; Stolle, C. J.; Korgel, B.A., "Colloidal CIGS and CZTS Nanocrystals: A Precursor Route to Printed Photovoltaics" *Journal of Solid State Chemistry* (2012), 189, 2-12.

Presentations

- Harvey, T. B.**, "New Solar Technologies: From Concept to Commercialization" *IUCRC Master Series Lectures* (2018) Austin, TX. (Invited Seminar Speaker)
- Harvey, T. B.**, "Solar Innovation in Central Texas" *Solar Austin* (2018) Austin, TX. (Invited Seminar Speaker)
- Harvey, T. B.**; Reddy, V.; Phillips, L.; Simonsen, B.; Korgel, B.A.; Morehead, S.; Chockla, A.; "Flexible CIGS Nanocrystal devices" *AICHE Annual Meeting* (2017), Minneapolis, MN.
- Harvey, T. B.**, "Cover it all with Solar: An Energy Entrepreneurship Story" *Graduate Engineering Council Seminar* (2016) Austin, TX. (Invited Seminar Speaker)
- Harvey, T. B.**; Bonafé, F.; Updegrave, T.; Reddy, V.; Thomas, C.; Kamarajugadda, S.C.; Stolle, C.J.; Pernik, D.; Du, J.; Korgel, B.A., "Photovoltaics from Automated, Ultra-Sonic Spray-Deposited Cu(In,Ga)Se₂ Nanocrystal Films" *AICHE Annual Meeting* (2014) Atlanta, GA.
- Harvey, T.B.**, "Photovoltaics - Current Status and Future Directions" *Energy Security Course for Indonesia Defense University* (2014) Monterey, CA. (Invited Lecture)
- Harvey, T.B.**; Stolle, C.J.; Bogart, T.; Du, J.; Pernik, D.; Akhavan, V. A; Korgel, B. A., "Multistep Selenization of Copper Indium Gallium Selenide (CIGS) Nanocrystal Photovoltaics," *AICHE Annual Meeting* (2013) San Francisco, CA.
- Harvey, T.B.**; Mori, I.; Stolle, C.J.; Bogart, T.; Ostrowski, D.P.; Glaz, M.S.; Du, J.; Pernik, D.; Akhavan, V. A; Vanden Bout, D.A.; Korgel, B.A., "Multistep Selenization of Copper Indium Gallium Selenide (CIGS) Nanocrystal Photovoltaics" *MRS ICMAT* (2013) June 30 to July 5, Suntec, Singapore.

Teaching

- Adjunct Faculty**, Central Texas College, Killeen Texas
 Introduction to Engineering- 2017 Spring, 2017 Fall, 2018 Spring, 2018 Fall, 2019 Spring
 Chemistry II – 2017 Summer, 2019 Spring
 Chemistry I - 2017 Spring, 2017 Fall, 2018 Spring, 2018 Fall (two sections), 2019 Spring
 Introduction to Chemistry – 2016 Fall (two sections)

Patents

- Photonic Curing of Nanocrystal Films for Photovoltaics, PCT/US2015/049858
 Bacterial Cellulose Paper-Based Flexible Electronics Employing Nanocrystals, US app 62/400,209