

Virtual Conference on Thermoelectrics (VCT 2020): US Program

All times are listed in Pacific Standard Time (PST), UTC – 07:00 hours		
DAY 1 July 21, 2020	US Session A1	US Session B1
09:00 - 09:15	Welcome	--
09:15 - 09:30	US-O.A1.01 Selective laser melting of $\text{Bi}_2\text{Se}_{0.3}\text{Te}_{2.7}$ and resulting nano- and micro-structures Welch, Ryan (LeBlanc)	US-O.B1.01 An efficient approach for calculating thermoelectric transport properties Ganose, Alex (Jain)
09:30 - 09:45	US-O.A1.02 Native Defects in CuInTe_2 Adamczyk, Jesse (Toberer)	US-O.B1.02 Designing chemical analogs to PbTe with intrinsic high band degeneracy and low lattice thermal conductivity He, Jiangang (Wolverton)
09:45 - 10:00	US-O.A1.03 Discordant nature of Cd in PbSe : off-centering and core-shell nanoscale CdSe precipitates lead to high TE performance Cai, Songting (Dravid)	US-O.B1.03 Lattice instabilities and phonon thermal transport : A case study for TlBr Pandey, Tribhuvan (Parker)
10:00-10:15	Break/Discussion	Break/Discussion
10:15-10:30	US-O.A1.04 Aikinite: a promising sulfide for thermoelectric applications Carnevali, Virginia (Fornari)	US-O.B1.04 Computational predictions on ternary selenides and tellurides diamond-like semiconductors: establishing the boundaries of achievable dopability. Gomes, Lidia C. (Ertekin)
10:30-10:45	US-O.A1.05 Temperature-dependent bond strength and sound velocity in $(\text{GeTe})_m\text{Sb}_2\text{Te}_3$ alloys Peng, Wanyue (Zevalkink)	US-O.B1.05 Modeling Transport in (pxn)-Type Transverse Thermoelectrics: Partial Gap Activation Model Shao, Qing (Grayson)
10:45-11:00	US-O.A1.06 Enhancement of Thermoelectric Performance for n-type PbTe-xGeTe Luo, Zhong-Zhen (Kanatzidis)	US-O.B1.06 Experimental Validation of High Thermoelectric Performance in RECuZnP_2 Predicted by High-Throughput DFT Calculations Poehls, Jan-Hendrik (Mar)
11:00-11:15	Break/Discussion	Break/Discussion
11:15-11:30	US-O.A1.07 Analysis of the Method of Four Coefficients Crawford, Caitlin (Toberer)	US-O.B1.07 Computational Discovery of an Enormous Class of Stable Quaternary Chalcogenides with Very Low Lattice Thermal Conductivity Pal, Koushik (Wolverton)
11:30-11:45	US-O.A1.08 Spin-thermoelectric Properties Characterization by Electron Spin Resonance Polash, Md Mobarak Hossain (Vashae)	US-O.B1.08 Understanding the origins of high valley degeneracy in PbTe using the tight-binding approximation Brod, Madison (Snyder)

11:45-12:00	US-O.A1.09 Full Experimental Seebeck Tensor Characterization for (p×n)-Type Transverse Thermoelectrics Juncen, Li (Grayson)	US-O.B1.09 Doping by Design: Finding New n-type Dopable Zintl Phases for Thermoelectrics Qu, Jiaying (Gorai)
12:00-12:15	Break/Discussion	Break/Discussion
12:15-12:30	Break	Break
12:30-12:45		
12:45-13:00		
13:00-13:15	US-O.A1.10 Evaluating Mobilities of Both Carriers from a Single Bulk Sample Using Photo-Seebeck Effect Pan, Zhenyu (Wang)	US-O.B1.10 Synthesis, crystal structure, and transport properties of two polymorphs of Ba ₈ Cu ₁₆ As ₃₀ clathrate Yox, Philip (Kovnir, Kirill)
13:15-13:30	US-O.A1.11 Creep behavior of thermoelectric materials Al Malki, Moath (Dunand)	US-O.B1.11 Intermediate-Level Doping Strategy to Simultaneously Optimize Power Factor and Phonon Thermal Conductivity for Improving Thermoelectric Figure-of-Merit Ren, Wuyang (Ren)
13:30-13:45	US-O.A1.12 Determination of the thermoelectric figure of merit using the Peltier cooling effect Bhattacharya, Sriparna (Goldsmid)	US-O.B1.12 Axis-Dependent Conduction Polarity in Re ₄ Si ₇ Single Crystals Scudder, Michael (Goldberger)
13:45-14:00	Break/Discussion	Break/Discussion
14:00-14:15	US-O.A1.13 Extended anharmonic collapse of phonon dispersions in SnS Lanigan-Atkins, Tyson (Delaire)	US-O.B1.13 Thermoelectric Transport of Semiconductor Full-Heusler VFe ₂ Al Anand, Shashwat (Snyder)
14:15-14:30	US-O.A1.14 Anharmonicity in binary chalcogenides through Raman spectroscopy Prakash, Parajuli (Rao)	US-O.B1.14 Anomalously low thermal conductivity in novel Sb-based clathrates obtained by rapid mechanosynthesis Ciesielski, Kamil (Toberer)
14:30-14:45	US-O.A1.15 The dependence of mechanical and thermal properties on dislocation strain and intrinsic defects in PbTe Male, James (Hermann)	US-O.B1.15 Thermal chiral anomaly in the magnetic-field induced ideal Weyl phase of Bi _{1-x} Sb _x topological insulators Vu, Dung (Heremans)
14:45-15:00	US-O.A1.16 Microstructural Evolution in Thermoelectric Materials Grovogui, Jann (Dravid)	US-O.B1.16 Electronic and Vibrational Properties of Colusites and Tetrahedrites Supka, Andrew (Fornari)
15:00 – 15:15	Break/discussion	Break/discussion

15:15-16:00	Poster session	Poster session
All times are listed in Pacific Standard Time (PST), UTC – 07:00 hours		
DAY 2 July 22, 2020	US Session A2	US Session B2
09:00-09:15	Welcome	--
09:15-09:30	US-O.A2.01 Microscopic Mechanisms of Glass-Like Lattice Thermal Transport in Cubic $\text{Cu}_{12}\text{Sb}_4\text{S}_{13}$ Tetrahedrites Xia, Yi (Wolverton)	US-O.B2.01 $\text{Ca}_{14}\text{AlBi}_{11}$ —a new Zintl phase from earth-abundant elements with a great potential for thermoelectric energy conversion Baranest, Sviatoslav (Bobev)
09:30-09:45	US-O.A2.02 When Band Convergence is Not Beneficial for Thermoelectricity Junsoo, Park (Jain)	US-O.B2.02 Structure, Transport Properties, and Optimization of $\text{Yb}_{21}\text{Mn}_4\text{Sb}_{18}$ He, Allan (Kauzlarich)
09:45-10:00	US-O.A2.03 Transition from crystal-like to amorphous-like heat conduction in structurally-complex crystals Hanus, Riley (Hermann)	US-O.B2.03 Exceptionally high electronic mobility in defect-rich $\text{Eu}_2\text{ZnSb}_{2-x}\text{Bi}_x$ alloys Chanakian, Sevan (Zevalkink)
10:00-10:15	Break/Discussion	Break/Discussion
10:15-10:30	US-O.A2.04 A chemical understanding of grain boundary dominated charge transport in ionic thermoelectric material Slade, Tyler (Kanatzidis)	US-O.B2.04 Structure, Magnetic Properties, and Enhanced Thermoelectric Figure of Merit in the Quinary Phase $\text{Yb}_{13-x}\text{Ca}_x\text{BaMgSb}_{11}$ ($x = 1 - 6$). Perez, Christopher (Kauzlarich)
10:30-10:45	US-O.A2.05 Thermal Resistance at a Twist Interface: Dislocation Grid and Misorientation Phonon Scattering Gurunathan, Ramya (Niu)	US-O.B2.05 The Effect of Multi-Band Transport on Thermal Conductivity in $\text{Yb}_{14}\text{MgSb}_{11}$ Max Wood (Bux)
10:45-11:00	US-O.A2.06 Understanding Defects from a Chemical Perspective Toriyama, Michael (Snyder)	US-O.B2.06 Single Crystal and Annealing Study on n-type $\text{Mg}_3(\text{Sb,Bi})_2$ Imasato, Kazuki (Snyder)
11:00-11:15	Break/Discussion	Break/Discussion
11:15-11:30	US-O.A2.07 Inherent anharmonicity of harmonic solids Agne, Matthias (Hermann)	US-O.B2.07 Systematic over-estimation of lattice thermal conductivity in materials with electrically-resistive grain boundaries Kuo, Jimmy (Snyder)

11:30-11:45	US-O.A2.08 GPU-Accelerated Ray-Tracing Methods for Determining Radiation View Factors in Multi-junction Thermoelectric Generators Hancock, Asher (Barry)	US-O.B2.08 N-type $Mg_3Sb_{2-x}Bi_x$ with Improved Thermal Stability for Thermoelectric Power Generation Shang, Hongjing (Ren)
11:45-12:00	US-O.A2.09 Best Practices for Finite Volume Modeling of Thermoelectric Generators Ledesma, Edward (Barry)	US-O.B2.09 Origin of unexpectedly low thermal conductivity in AMg_2X_2 (A = Mg,Ca,Yb, X = Sb, Bi) Ding, Jingxuan (Delaire)
12:00-12:15	Break/Discussion	Break/Discussion
12:15-12:30	Break	Break
12:30-12:45		
12:45-13:00		
13:00-13:15		
13:00-13:15	US-O.A2.10 $Mg_3Bi_{2-x}Sb_x$ -based device with a high thermoelectric energy conversion efficiency Liang, Zhongxin (Ren)	US-O.B2.10 Spin Seebeck effect in Vanadium Tetracyanoethylene Zheng, Yuehua (Heremans)
13:15-13:30	US-O.A2.11 All-Inorganic Halide Perovskites as Potential TE Materials: Dynamic Cation off-Centering Induces Ultralow Thermal Conductivity Xie, Hongyao (Kanatidis)	US-O.B2.11 Spin-Seebeck and anomalous Nernst effects in MnBi and Bi/MnBi composites Wooten, Brandi L. (Heremans)
13:30-13:45	US-O.A2.12 3D Extruded Composite Thermoelectric Threads for Flexible Energy Harvesting Peng, Jun (Grayson)	US-O.B2.12 Thermoelectric Transport Measurement of Supported Holey Silicon Thin Films across a Broad Temperature Range Zhu, Tianhui (Zebarjadi)
13:45-14:00	US-O.A2.13 The relation between materials zT and thermoelectric cooler performance Cui, Runzi (Wang)	US-O.B2.13 Thermoelectric Properties of Minerals with the Mawsonite Structure Silio, Ilaria (Fornari)
14:00-14:15	Break/Discussion	Break/Discussion
14:15-14:30	US-O.A2.14 3D ink-extrusion additive manufacturing of Bi_2Te_3 thermoelectrics Kenel, Christoph (Dunand)	US-O.B2.14 Effect of Coulombic Interactions and Dopant Distribution on Charge Transport Dynamics in Polymer Thermoelectrics Upadhyaya, Meenakshi (Aksamija)
14:30-14:45	US-O.A2.15 The Integrated Thermoelectric Device - Waste Heat Recovery from Diesel-Powered Public Transit Buses Cameron, Joshua (Barry)	US-O.B2.15 Morphological effects on intrinsically conductive polymers Ogle, Jonathan (Whittaker)
14:45-15:00	US-O.A2.16 Van der Waals heterostructure based solid-state thermionic cooler. Rosul, Golam (Zebarjadi)	US-O.B2.16 Altering Spin Concentrations in Self-Doped Small Molecules Powell, Danny (Whittaker)
15:00-15:15	US-O.A2.17 Thermo-mechanical investigation of annular thermoelectric generator Ahmed, Ahmed (Cotton)	US-O.B2.17 Investigating thermoelectric transport at the hard-soft interface of hybrid Te-PEDOT:PSS nanowires Gordon, Maddie (Urban)
15:15-15:30	Discussion and closing remarks	Discussion and closing remarks