

**30th International Conference on Thermoelectrics
ICT 2011
July 17-21, 2011, Traverse City, MI, USA**

Time	Sunday	Monday	Tuesday	Wednesday	Thursday							
	July 17	July 18	July 19	July 20	July 21							
730-800	Arrival and Check-In	Registration/ Breakfast	Registration/ Breakfast	Registration/ Breakfast	Registration/ Breakfast							
800-830		Arrival and Check-In	Plenary Session	Parallel Sessions	Parallel Sessions	Parallel Sessions						
830-900												
900-930			Arrival and Check-In	Plenary Session	Parallel Sessions	Parallel Sessions	Parallel Sessions					
930-1000												
1000-1030				Arrival and Check-In	Coffee	Coffee	Coffee	Coffee				
1030-1100					Arrival and Check-In	Parallel Sessions	Parallel Sessions	Parallel Sessions	Awards Session			
1100-1130												
1130-1200						Arrival and Check-In	Plenary Session	Parallel Sessions	Parallel Sessions	Parallel Sessions		
1200-1230												
1230-1300							Arrival and Check-In	Lunch	Lunch	Lunch	Lunch	
1300-1330								Arrival and Check-In	Parallel Sessions	Parallel Sessions	Parallel Sessions	Parallel Sessions
1330-1400												
1400-1430	Arrival and Check-In								Parallel Sessions	Parallel Sessions	Parallel Sessions	Parallel Sessions
1430-1500												
1500-1530		Arrival and Check-In							Coffee	Coffee	Coffee	Farewell
1530-1600			Arrival and Check-In						Parallel Sessions	Parallel Sessions	Parallel Sessions	Golf Outing
1600-1630												
1630-1700				Arrival and Check-In					Parallel Sessions	Parallel Sessions	Parallel Sessions	Golf Outing
1700-1730												
1730-1800					Arrival and Check-In				Parallel Sessions	Parallel Sessions	Parallel Sessions	Golf Outing
1800-1830												
1830-1900						Arrival and Check-In			Poster Session/ Reception	Buses Depart	Board Meeting	Golf Outing
1900-1930												
1930-2000							Arrival and Check-In	Poster Session/ Reception	Museum/Beach	Banquet	Golf Outing	
2000-2030												
2030-2100	Arrival and Check-In							Poster Session/ Reception	Museum/Beach	Banquet	Golf Outing	
2100-2130												
2130-2200		Arrival and Check-In						Poster Session/ Reception	Museum/Beach	Banquet	Golf Outing	
2130-2200												

30th International Conference on Thermoelectrics (ICT 2011)
July 17-21, 2011
Grand Traverse Resort
Traverse City, Michigan USA

Scientific Program

Monday Morning 8:45-10:00

	Governor's D Opening/Plenary Session
8:30-9:00	Opening/Welcome Donald Morelli, ICT 2011 Conference Chair Dr. Leo Kempel, Associate Dean of Research, Michigan State Univ. Tino Breithaupt, Traverse City Area Chamber of Commerce/ Michigan Economic Development Corporation Thierry Caillat, President, International Thermoelectric Society
9:00-9:45	Plenary Talk Dr. Altaf Carim, US Department of Energy and White House Office of Science and Technology Policy
9:45-10:00	In Memoriam Norbert Elsner, Hylan Lyon, and Eugeny Iordanishvili Konstantinovich

10:00-10:30 Coffee Break, Governor's pre-function area

Monday Morning 10:30-12:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session M1: Novel Concepts <i>Chair: Joseph Heremans</i>	Governor's D Session M2: Bi₂Te₃ I: Bulk Nanostructured <i>Chair: Zhifeng Ren</i>	Peninsula Room Session M3: Generators I <i>Chair: Lasse Rosendahl</i>
10:30-10:45	M1.1 J.L. Cohn, et al. <i>Giant bipolar Nernst effect in a quasi-one dimensional metal</i>	M2.1 R.J. Mehta, et al. <i>High figure of merit n- and p-type bulk thermoelectric materials from directed synthesis and assembly of sculpted pnictogen chalcogenide nanocrystals</i>	M3.1 J.D. Koenig, et al. <i>Development of a thermoelectric generator based on chalcogenides for space applications</i>
10:45-11:00		M2.2 J.S. Dyck, et al. <i>Thermoelectric properties of chemically-synthesized Bi_{2-x}Sb_xTe₃ nanocrystalline materials</i>	M3.2 J.-A. Paik, et al. <i>Component life tests for segmented thermoelectric couples</i>
11:00-11:15	M1.2 J.P. Heremans, et al. <i>The spin-Seebeck effect in GaMnAs</i>	M2.3 U. Pelz, et al. <i>An aqueous chemistry approach to nano-bismuth telluride</i>	M3.3 S. Krishnan, et al. <i>Progress towards an optimization methodology for combustion driven portable thermoelectric power generation systems</i>
11:15-11:30	M1.3 Bo Yu, et al. <i>Modulation doping in three-dimensional bulk nanocomposites</i>	M2.4 C.-H. Yeh, et al. <i>Spark plasma sintering synthesized nanostructured (Bi,Sb)₂Te₃ alloys through the mixture of binary compounds Sb₂Te₃ and Bi₂Te₃</i>	M3.4 D.T. Crane, et al. <i>Validating steady-state and transient modeling tools for high power density thermoelectric generators</i>
11:30-11:45	M1.4 J.-H. Bahk, et al. <i>Thermoelectric power factor enhancement through miniband- conduction in III-V semiconductor superlattices at low temperatures</i>	M2.5 J.B. Beck et al. <i>Explosive shock wave consolidation of nanostructured bismuth telluride</i>	M3.5 J.S. Sakamoto, et al. <i>Skutterudite-based thermoelectric technology for waste heat recovery: progress towards a 1kW generator</i>
11:45-12:00	M1.5 C.F. Gallo, et al. <i>Highly anisotropic materials for improved thermoelectric and/or magnetothermoelectric performance</i>	M2.6 K.H. Lee, et al. <i>Enhancement of thermoelectric figure of merit for Bi_{0.5}Sb_{1.5}Te₃ by metal nanoparticle decoration</i>	

12:00-13:30 Lunch, Governor's AB

Monday Afternoon 13:30-15:00

SESSION A

SESSION B

SESSION C

	Governor's C Session M4: Oxides I <i>Chair: Kunihito Koumoto</i>	Governor's D Session M5: Skutterudites I <i>Chair: Ctirad Uher</i>	Peninsula Room Session M6: Device Performance <i>Chair: Tim Hogan</i>
13:30-13:45	M4.1 M. Backhaus-Ricoult <i>Evaluation of titanium oxide based materials for thermoelectric power generation</i>	M5.1 M. Kaviany, <i>Structural order-disorder transitions and phonon conductivity of partially filled skutterudites</i>	M6.1 R. Funahashi, et al <i>Power generation of silicide modules for middle temperature range application</i>
13:45-14:00	M4.2 C. Liu Et al., <i>Preparation and properties of some misfit-structured thermoelectric oxides</i>		M6.2 K. Miyazaki et al <i>Printed thermoelectric thick film for a thermoelectric generator</i>
14:00-14:15	M4.3 T. Sparks, et al. <i>Electrical and thermal transport properties of strongly-correlated LiMn_2O_4 and Co_3O_4 spinels</i>	M5.2 C. Zhou, et al. <i>High temperature thermoelectric properties of Yb-filled skutterudite nanocomposites with antimonide nanoinclusions</i>	M6.3 T. Nemoto, et al. <i>Power generation characteristics of Mg_2Si uni-leg thermoelectric generator</i>
14:15-14:30	M4.4 A. Sakai, et al. <i>Systematic investigation of thermoelectricity in $\text{Sr}_n\text{Nb}_n\text{O}_{3n+2}$</i>	M5.3 X. Su, et al. <i>Microstructure and thermoelectric transport properties of $\text{CoSb}_{2.75}\text{Ge}_{0.25-x}\text{Te}_x$ prepared by rapid solidification</i>	M6.4 G. Fraisse, et al. <i>Accuracy comparison of whole thermoelectric leg models</i>
14:30-14:45	M4.5 F.P. Zhang, et al. <i>Preparation, characterization, and high temperature transport properties of Fe-doped $\text{Ca}_{1-x}\text{Fe}_x\text{MnO}_{3+d}$ ($0 \leq d \leq 0.14$) oxides</i>	M5.4 S. Humer, et al. <i>From superconductivity towards thermoelectricity: $\text{LaPtGe}_{12-x}\text{Sb}_x$</i>	M6.5 L. Chen, <i>High performance skutterudite thermoelectric device: efficiency and service behavior</i>
14:45-15:00	M4.6 F. Li and J.-F. Li, <i>Effect of sol-gel coating on thermoelectric performance of Ni-doped LaCoO_3 ceramics</i>	M5.5 X. Li, et al. <i>Effect of lead on thermoelectric performance of $\text{Yb}_y\text{Co}_4\text{Sb}_{12}$</i>	

15:00-15:30 Coffee Break, Governor's pre-function area

Monday Afternoon 15:30-17:15

SESSION A

SESSION B

SESSION C

	Governor's C Session M7: Zintl Compounds <i>Chair: Jim Salvador</i>	Governor's D Session M8: Full and Half-Heusler <i>Chair: Terry Tritt</i>	Peninsula Room Session M9: Characterization I: Mechanical <i>Chair: E.D. Case</i>
15:30-15:45	M7.1 E. Toberer, et al. <i>Ca₃AlSb₃: an inexpensive, non-toxic thermoelectric material for waste heat recovery</i>	M8.1 X. Yan, et al. <i>Improved ZT in both p- and n-type half-Heuslers</i>	M9.1 E.D. Case, <i>Thermal fatigue and waste heat recovery via thermoelectrics</i>
15:45-16:00	M7.2 A. Zevalkink et al. <i>Improved carrier concentration control in Zn doped Ca₅Al₂Sb₆</i>	M8.2 G. Joshi, et al. <i>Enhancement in thermoelectric figure of merit of n-type half-Heuslers</i>	
16:00-16:15	M7.3 C. Uvarov, et al. <i>Enhanced high-temperature thermoelectric performance of Yb_{14-x}Ca_xMnSb₁₁</i>	M8.3 P. Poudeu, et al. <i>Atomic-scale structural engineering approach to half-Heusler nanocomposites with drastically enhanced figure of merit</i>	M9.2 R.D Schmidt, et al. <i>Powder processing and mechanical characterization of lower cost or lead-free thermoelectric materials</i>
16:15-16:30	M7.4 K. Star, et al. <i>Synthesis and thermoelectric properties of Yb₁₄MnSb₁₁ derivatives</i>	M8.4 D. Do, et al. <i>Electronic structure and thermoelectric properties of iron-based full Heusler pseudo-gap system Fe₂NA [(N,A) = (V, Al) and (Ti, Sn)]</i>	M9.3 J.E. Ni, et al. <i>Limited bloating in (Pb_{0.95}Sn_{0.05})_{0.92}(PbS)_{0.08}-0.055%PbI₂ specimens as a result of processing conditions</i>
16:30-16:45	M7.5 S. Wang, et al. <i>Enhancement in thermoelectric performance by in-situ nanostructures and minute Cd-doping in β-Zn₄Sb₃</i>	M8.5 A. Nishide, et al. <i>High thermoelectric power factor of Heusler Fe₂VAl thin films with lattice strain</i>	M9.4 V. Ravi et al <i>Mechanical properties and thermomechanical modeling of thermoelectric materials and couples</i>
16:45-17:00	M7.6 J.-P. Fleurial, et al. <i>The search for practical next generation high temperature thermoelectric materials</i>	M8.6 D. Wee, et al. <i>Quasi-harmonic vibrational properties of TiNiSn from ab-initio phonons</i>	M9.5 S. Firdosy, et al. <i>Flexural properties of selected thermoelectric materials</i>
17:00-17:15	M7.7 J. Nesbitt, et al. <i>Thin coatings for sublimation suppression for Yb₁₄MnSb₁₁ thermoelectric material for space power applications</i>	M8.7 H.-H. Xie, et al. <i>Effects of Ti substitution on the thermoelectric properties of Hf_{0.6}Zr_{0.4}NiSn_{0.98}Sb_{0.02} half-Heusler alloys by levitation melting and SPS</i>	M9.6 J.M. Ma et al., <i>Characterization of the mechanical properties of La_{3-x}Te₄</i>

18:15-20:15 Poster Session, Governor's EF

Tuesday Morning 8:15-10:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session T1: Novel Materials I <i>Chair: Holger Kleinke</i>	Governor's D Session T2: Skutterudites II <i>Lidong Chen</i>	Peninsula Room Session T3: Automotive I <i>Chair: H. Schock</i>
8:15-8:30			T3.1 F. R. Stabler, <i>Thermoelectric systems impact on cars and trucks</i>
8:30-8:45	T1.1 T. Mori, et al. <i>Doping into voids and framework of boron cluster compounds</i>	T2.1 Puneet, et al. <i>Effect of In incorporation on the thermoelectric properties of CeFe_{3.5}Ni_{0.5}Sb₁₂</i>	T3.2 G.P. Meisner, <i>Thermoelectric generator prototypes for waste heat recovery from automotive exhaust gas</i>
8:45-9:00	T1.2 H. Sun and D.T. Morelli <i>Thermoelectric properties of Co_{1-x}Rh_xSi_{0.98}B_{0.02} alloys</i>	T2.2 J.Y. Cho, et al. <i>Thermoelectric properties of p-type skutterudites Yb_xFe_{3.5}Ni_{0.5}Sb₁₂ (0.8 ≤ x ≤ 1)</i>	T3.3 P. Chen and M. Soulliere <i>System level modeling of thermoelectric generators for automotive applications</i>
9:00-9:15	T1.3 M. Wagner, et al. <i>Defect and substitution variants of RuIn₃ – novel thermoelectrics</i>	T2.3 P.F. Qiu, et al. <i>High temperature electrical and thermal transport properties of fully filled skutterudites RFe₄Sb₁₂ (R = Ca, Sr, Ba, La, Ce, Pr, Nd, Eu, and Yb)</i>	T3.4 J. Kitte, et al. <i>Thermoelectrics in the vehicle – challenges from the ideal process to integrated concept</i>
9:15-9:30	T1.4 Y. Takagiwa et al. <i>Thermoelectric properties of polygrained FeGa₃-type intermetallic compounds Ru(Ga,In)₃</i>	T2.4 R. Liu, et al. <i>High performance p-type skutterudites: the effect of Ni-doping and dual-filling</i>	
9:30-9:45	T1.5 S. Zhu, et al. <i>Optimizing the thermoelectric properties of polycrystalline In₄Se₃ by the in-situ formation of InSb nanoinclusions</i>	T2.5 Q. Jie, et al. <i>Improvements on thermoelectric properties and thermal stability of Nd-filled p-type skutterudites</i>	T3.5 L.A. Rosendahl, et al. <i>A novel application for thermoelectric generation: brake pads as an energy source</i>
9:45-10:00	T1.6 J.Y. Yang, et al. <i>Thermoelectric properties of polycrystalline In₄Se_{3-x} fabricated by mechanical alloying and hot pressing</i>	T2.6 P. Wei, et al. <i>Rapid preparation and thermoelectric properties of (Ba,In) double-filled skutterudites with unique nanostructures</i>	T3.6 D. Tatarinov et al. <i>Optimized characterization of thermoelectric generators for the application in automotives</i>

10:00-10:30 Coffee Break, Governor's pre-function area

Tuesday Morning 10:30-12:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session T4: Theory I <i>Chair: Wenqing Zhang</i>	Governor's D Session T5: Bi₂Te₃ II: Bulk <i>Chair: H. Scherrer</i>	Peninsula Room Session T6: Characterization II: Thermoelectric <i>Chair: Neil Dilley</i>
10:30-10:45	T4.1 B. Kozinsky <i>Decoupling and predicting thermoelectric effects using computation: thermal and electronic transport</i>	T5.1 D.L. Medlin, et al. <i>Atomistic studies of grain boundary structure in bismuth telluride</i>	T6.1 S. Iwanaga and G.J. Snyder <i>The scanning Seebeck coefficient measurement system for quality control of bulk and thin film thermoelectric materials</i>
10:45-11:00		T5.2 C. Schumacher, et al <i>Highly crystalline and perfectly stoichiometric bismuth antimony telluride compounds by pulsed electrochemical deposition technique and annealing</i>	T6.2 Y.G. Yan, et al. <i>Combinatorial approach on thermoelectric materials using a temperature dependent screening tool</i>
11:00-11:15	T4.2 M.-S. Lee and S.D. Mahanti <i>Validity of rigid band approximation in studying thermoelectric properties</i>	T5.3 C.M. Jaworski, and J.P. Heremans, <i>Porous tetradymite bismuth based chalcogenides with high figure of merit</i>	T6.3 P. Garrity <i>Direct measurement of absolute thermoelectric coefficients through electronic fluctuations</i>
11:15-11:30	T4.3 D. Parker, et al. <i>Doping dependence of thermoelectric performance in Mo₃Sb₇: first principles calculations</i>	T5.4 S.Q. Yang, et al. <i>The fabrication of high thermoelectric performance p-type Bi_{0.5}Sb_{1.5}Te₃ crystals using gradient freeze</i>	T6.4 S. Lee, et al <i>Characterization of electron transport in Bi₂Te_{2.7}Se_{0.3} nanocomposite using the method of four coefficients</i>
11:30-11:45	T4.4 K. Kutorasinski et al <i>Calculations of electronic structure and transport coefficients in disordered half-Heusler alloys using KKR-CPA method</i>	T5.5 C.-H Yeh et al. <i>Optimization of anti-site defects interaction by extra Te content on (Bi-Sb)₂Te₃ thermoelectric materials</i>	T6.5 M. Schmidt et al. <i>Zero-field thermopower and thermal conductivity of a thin heterostructure membrane with a 2D electron gas</i>
11:45-12:00	T4.5 E. Flage-Larsen, et al. <i>The Lorenz function; its scattering properties and the validity of the parabolic approximation</i>	T5.6 J.-J. Shen, et al. <i>Thermoelectric properties of textured bismuth telluride based polycrystalline thermoelectric alloys prepared by spark plasma sintering</i>	T6.6 J. Chase, et al. <i>Measurement techniques for characterizing specific contact resistance of ohmic contacts between thermoelectric materials and metallization layers</i>

12:00-13:30 Lunch, Governor's AB

Tuesday Afternoon 13:30-15:00

SESSION A

SESSION B

SESSION C

	Governor's C Session T7: Nanoscale/Low Dimension Chair: Kevin Pipe	Governor's D Session T8: Novel Materials II Chair: Yuri Grin	Peninsula Room Session T9: Generators II Chair: Terry Hendricks
13:30-13:45	T7.1 K. Zhang et al <i>Temperature dependent thermoelectric properties of HgCdTe superlattices</i>	T8.1 F. Gascoin, et al. <i>CdI₂ type layered structure as potential thermoelectric materials: example of the ACrSe₂ system</i>	T9.1 K. Settaluri et al <i>Thin thermoelectric generator system for body energy harvesting</i>
13:45-14:00	T7.2 R.B. Sadeghian et al <i>Calculation of nonlinear thermoelectric coefficients of InAs_{1-x}Sb_x using Monte Carlo method</i>		T9.2 D. Samson, et al. <i>Flight test results of a thermoelectric energy harvester for aircraft</i>
14:00-14:15	T7.3 R. Vidu, et al. <i>Fabrication of doped CoSb₃ nanowires for high temperature thermoelectric materials</i>	T8.2 E.J. Skoug, et al. <i>Thermoelectric properties of the Cu₃SbSe₄-Cu₃SbS₄ solid solution</i>	T9.3 N.R. Kristiansen, et al. <i>Waste heat recovery from a marine waste incinerator</i>
14:15-14:30	T7.4 K. Miyazaki et al <i>Enhanced figure of merit of a nano-porous thin film</i>	T8.3 D. Do et al. <i>Electronic structure and thermoelectric properties of Cu₃SbSe₄</i>	T9.4 P.V. Mortensen and A.A. Enkeshafi <i>A novel application for thermoelectric generators: residential combined heat and power</i>
14:30-14:45	T7.5 N. Neophytou, et al. <i>Thermoelectric power factor of narrow silicon nanowires from atomistic considerations</i>	T8.4 J. Salvador, et al. <i>Microstructural investigation and thermoelectric properties of Cu/Ge/Se based diamond-like semiconductors</i>	T9.5 C. Suter and A. Steinfeld <i>A 1kWel thermoelectric stack for geothermal power generation – modeling and geometrical optimization</i>
14:45-15:00	T7.6 M. Murata et al. <i>Four-wire resistance measurements on bismuth nanowire encased in quartz template utilizing focused ion beam processing</i>	T8.5 L. Xi, et al. <i>Cu-Se bond network and thermoelectric performance of copper-containing compounds with diamond-like structure</i>	T9.6 T. Thompson, et al., <i>Integrating aerogel into space and terrestrial thermoelectric generator technology</i>

15:00-15:30 Coffee Break, Governor's pre-function area

Tuesday Afternoon 15:30-17:15

	SESSION A	SESSION B	SESSION C
	Governor's C Session T10: Magnesium Silicide <i>Chair: Mark Soulliere</i>	Governor's D Session T11: PbTe/AgSbTe₂/LAST <i>Chair: J. Snyder</i>	Peninsula Room Session T12: Thin Film Devices <i>Chair: H. Böttner</i>
15:30-15:45	T10.1 Z. Bian et al. <i>Thermoelectric transport modeling of Mg₂Si with embedded nanoparticles</i>	T11.1 M.D. Nielsen, et al. <i>Thermal conductivity of NaSbTe₂, AgSbTe₂, and their alloys: experimental results</i>	T12.1 J. Nurnus, <i>Micropelt's thin film thermoelectric generators: technology, devices, and applications</i>
15:45-16:00	T10.2 W. Liu et al. <i>Cooperative control of the electrical and thermal transport properties of Mg₂Si_{1-x-y}Sn_xSb_y by optimizing Sn/Si ratio combined with Sb doping</i>	T11.2 Y. Chen et al. <i>Transport properties of (Ag_{1-y}SbTe_{2+z})_{1-x}(SnTe)_x solid solutions</i>	
16:00-16:15	T10.3 N. Satyala and Daryoosh Vashaee <i>Modeling of thermoelectric properties of nanostructured magnesium silicide (Mg₂Si) compounds</i>	T11.3 M. Kanatzidis <i>Nanoscience of advanced bulk thermoelectrics</i>	T12.2 D.H. Lee, et al. <i>Thermoelectric devices based on bulk nanostructured silicon phononic crystals and nanowires</i>
16:15-16:30	T10.4 S.K. Bux, et al. <i>Mechanochemical synthesis and thermoelectric properties of magnesium silicide</i>		T12.3 T. Nishino and T. Suzuki <i>Fabrication and characterization of flexible thermoelectric devices using metal-filled via films</i>
16:30-16:45	T10.5 T. Yi et al. <i>Enhancement of thermoelectric efficiency of Mg₂Si with Si nanocomposites</i>	T11.4 J. Yang, et al. <i>Microstructure, nucleation, and electronic band structure modulation in AgPb_mSbTe_{2+m}-type nanocomposites</i>	T12.4 M. Mizoshiri et al., <i>Thin-film thermoelectric modules for power generation using focused light</i>
16:45-17:00	T10.6 H. Zhiming, et al. <i>Preparation of Mg₂Si_{0.4-x}Sb_xSn_{0.6} by induction melting and spark plasma sintering, and thermoelectric properties</i>	T11.5 J. Dadda, et al. <i>The influence of annealing on nano/microstructures and thermoelectric properties of AgPb₁₈SbTe₂₀ compounds</i>	T12.5 R. Rostek, et al. <i>Fabrication and optimization of Bi₂Te₃ and (Bi,Sb)₂Te₃ microstructures for thermoelectric energy harvesting applications</i>
17:00-17:15	T10.7 H.L. Gao et al. <i>Flux synthesis and thermoelectric properties of eco-friendly Sb doped Mg₂(Si,Sn) solid solutions</i>	T11.6 Z. Yu et al. <i>Synthesis and thermoelectric properties of LAST system bulk materials: substitution of VIB-group elements for tellurium</i>	T12.6 A. Yamamoto et al. <i>The effects of thermoelectric film thickness on the performance of in-plane thermoelectric modules</i>

18:15-18:45 Bus Departures for Excursions, Hotel Lobby/Entrance

Wednesday Morning 8:15-10:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session W1: Oxides II <i>Chair: M. Backhaus-Ricoult</i>	Governor's D Session W2: Bi₂Te₃ III: Low Dimensional <i>Chair Jean-Pierre Fleurial</i>	Peninsula Room Session W3: Automotive II <i>Chair: Gregory Meisner</i>
8:15-8:30		W2.1 N. Peranio et al. <i>Single-crystalline, stoichiometric Bi₂Te₃ nanowires for transport in the basal plane</i>	W3.1 L.I. Anatyshuk and R.V. Kuz, <i>Materials for automotive thermoelectric generators</i>
8:30-8:45	W1.1 D. Berardan, et al. <i>Thermoelectric properties of ZnO-based oxides revisited</i>	W2.2 M.P. Siegal, et al. <i>Independently controlling composition and structure in Bi₂(Te_{1-x}Se_x)₃ nanowires to improve thermoelectric properties</i>	W3.2 C. Maranville, <i>Thermoelectric generator prototypes for waste heat recovery from automotive exhaust gas</i>
8:45-9:00	W1.2 Y. Ba, et al. <i>Nanostructured oxide thermoelectric materials Nd_{2/3-x}Li_{3x}TiO₃ with low thermal conductivity</i>	W2.3 G. Wang et al. <i>Structure analysis of Sb₂Te₃ film on (0001) sapphire</i>	
9:00-9:15	W1.3 B. Dabrowski and S. Kolesnik, <i>Exploration of transition metal perovskites for enhanced thermopower</i>	W2.4 Z. Aabdin, et al. <i>Sb₂Te₃ and Bi₂Te₃ thick films grown by room temperature MBE</i>	W3.3 L. Goenka and C. Maranville <i>System-level considerations for automotive thermoelectric HVAC</i>
9:15-9:30	W1.4 N. Van Nong et al. <i>Heavy ions doping coupled with metallic nano-inclusions: and effective way to improve the thermoelectric performance of p-type layered cobalt oxide materials</i>	W2.5 D. Banga et al. <i>Synthesis of Bi₂Te₃/Sb₂Te₃ superlattice electrodeposits via electrodeposition</i>	W3.4 T. Okuma et al. <i>A novel application of thermoelectric modules to HVAC system under cold climate operation</i>
9:30-9:45	W1.5 R.J. Mehta, et al. <i>Doped zinc oxide nanocrystal assemblies for thermoelectric waste heat scavenging</i>	W2.6 M. Winkler et al. <i>Sputtered n-type soft superlattices based on Bi₂Te₃/(Bi,Sb)₂Te₃ created by nanoalloying</i>	W3.5 H. Schock, <i>Prospects for implementation of thermoelectric generators as waste heat recovery systems in class 8 truck applications</i>
9:45-10:00	W1.6 M. Ohtaki, et al. <i>Thermoelectric properties of ZnO with multinary doping</i>	W2.7 A. Peng, et al. <i>Synthesis and characterization of Bi_{2-x}Sb_xTe₃ quantum dots and their thermoelectric properties</i>	W3.6 J. Fairbanks, <i>Automotive thermoelectric generators and air conditioner/heaters</i>

10:00-10:30 Coffee Break, Governor's pre-function area

Wednesday Morning 10:30-12:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session W4: Micro/nanostructural Effects <i>Chair: Akram Boukai</i>	Governor's D Session W5: Skutterudites III <i>Chair: Jihui Yang</i>	Peninsula Room Session W6: Device Design/Fabrication I <i>Chair: Ryoji Funahashi</i>
10:30-10:45	W4.1 K. Nielsch <i>Overview: German priority program on "Nanostructured Thermoelectric Materials"</i>	W5.1 X. Tang <i>Melt spinning-spark plasma sintering¹: a novel approach to prepare high thermoelectric performance nanocomposites</i>	W6.1 D. Wesolowski et al <i>A high temperature, high vacuum compatible Bi₂Te₃-based thermoelectric module</i>
10:45-11:00	W4.2 J. He et al. <i>Probing the thermodynamics and microstructures of p-Bi₂Te₃ thermoelectric nanocomposites: a neutron scattering study</i>		W6.2 J. D'Angelo, et al. <i>Fabrication and characterization of half-Heusler and skutterudite thermoelectric power generation devices for waste heat recovery</i>
11:00-11:15	W4.3 I. Blum et al. <i>Atom-probe tomography of PbTe-based nanostructured thermoelectric materials</i>	W5.2 G. Rogl et al. <i>High pressure torsion (HPT): a new route to high ZTs?</i>	W6.3 H.-W. Lee <i>The advance of thermoelectric generation technology in Korea</i>
11:15-11:30	W4.4 T. Ikeda et al. <i>Nanostructure control and lattice thermal conductivities of PbTe-based materials</i>	W5.3 S.R. Sarath Kumar et al. <i>Thermoelectric properties of single phase In_{0.2}Yb_{0.2}Co₄Sb₁₂ thin films</i>	
11:30-11:45	W4.5 J.L. Lensch-Falk et al <i>Characterization of electrodeposited nano-crystalline Sb₂Te₃ films</i>	W5.4 K. Biswas et al. <i>Thermal cycling effects on the thermoelectric properties of n-type In, Ce based skutterudite compounds</i>	W6.4 S.-M. Choi et al. <i>A power generation test for oxide-based thermoelectric modules using p-type Ca₃Co₄O₉ and n-type Ca_{0.9}Nd_{0.1}MnO₃ legs</i>
11:45-12:00	W4.6 J.H. Hyung We, et al. <i>Evaluation of thermal conductivity of thin film thermoelectric materials prepared by screen printing technique</i>	W5.5 H. Li, et al. <i>Microstructure and phase transition of melt-spun Yb_{0.2}Co₄Sb₁₂ compound during pre-annealing process</i>	W6.5 J. Guo et al <i>Development of skutterudite thermoelectric materials and modules</i>

12:00-13:30 Lunch, Governor's AB

Wednesday Afternoon 13:30-15:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session W7: Novel Materials III: Organic <i>Chair: Stephanie Brock</i>	Governor's D Session W8: More Silicides and Heuslers <i>Chair: Ferdinand Poudeu</i>	Peninsula Room Session W9: Device Design/Fabrication II <i>Chair: Jeff Sakamoto</i>
13:30-13:45	W7.1 G.-H. Kim, et al. <i>Thermoelectric measurements of pentacene thin films</i>	W8.1 F. Dynys, et al. <i>Thermoelectric materials for aeronautical power generation</i>	W9.1 T. Caillat et al <i>Advanced high temperature thermoelectric materials and components</i>
13:45-14:00	W7.2 A. Chamoire, et al. <i>Organic based semiconductor as thermoelectric material</i>	W8.2 V. Ponnambalam, et al. <i>Nowotny chimney-ladder structure compounds a potential thermoelectrics</i>	W9.2 T. Hogan, et al. <i>PECS processed thermoelectric materials and modules</i>
14:00-14:15	W7.3 N. Toshima et al, <i>Organic thermoelectric materials composed of conducting polymers and metal nanoparticles</i>	W8.3 J. Higgins et al. <i>Synthesis and thermoelectric properties of nanowires and bulk nanostructured manganese silicide (MnSi_{1.75})</i>	W9.3 C. Caylor, et al. <i>High performance thermoelectric cooling modules based on advanced bulk nanostructured materials</i>
14:15-14:30	W7.4 N. Gothard et al. <i>Quasi-one dimensional doped phthalocyanines for thermoelectric applications</i>	W8.4 A. Pokhrel et al. <i>Synthesis of bulk nanostructured higher manganese silicides for thermoelectric applications</i>	W9.4 J. Trujillo et al. <i>Metal-matrix nanocomposites with tailored coefficients of thermal expansion (CTE) for improved thermomechanical reliability of thermoelectric devices</i>
14:30-14:45	W7.5 Y. Du, et al. <i>Preparation and thermoelectric properties of polythiophene/multiwalled carbon nanotube composites</i>	W8.5 M. Schwall, et al. <i>Phase separation in Heusler compounds with Clb structure</i>	W9.5 D. Madan, et al. <i>Printed Se-doped n-type Bi₂Te₃ thick film thermoelectric generators</i>
14:45-15:00	W7.6 M.H. Check, et al. <i>Synthesis and characterization of fulleride materials</i>	W8.6 J. Shiomi et al. <i>Lattice thermal conductivity of half-Heusler compounds from first principle calculations</i>	W9.6 S.L. Li et al <i>Thermomechanical analysis of a thermoelectric module</i>

15:00-15:30 Coffee Break, Governor's pre-function area

Wednesday Afternoon 15:30-17:15

	SESSION A	SESSION B	SESSION C
	Governor's C Session W10: Clathrate Compounds <i>Chair: Peter Rogl</i>	Governor's D Session W11: Bi₂Te₃ IV: More Bulk Nanostructured <i>Chair: Jeff Dyck</i>	Peninsula Room Session W12: Characterization III: Thermal <i>Chair: Hsin Wang</i>
15:30-15:45	W10.1 D. Thompson et al. <i>Thermoelectric properties of type I clathrates (Sr₈Ni_xGa_{14-x}Ge₃₁)</i>	W11.1 W. Xie, et al. <i>High performance (Bi,Sb)₂Te₃ nanocomposite rapidly prepared by single element melt spinning combined with spark plasma sintering</i>	W12.1 H. Böttner et al. , <i>Transport properties of bulk thermoelectrics: report on recent international round-robin efforts</i>
15:45-16:00	W10.2 Z. Ye et al. <i>Synthesis and thermoelectric properties of Au-substituted type I clathrates</i>	W11.2 W.S. Liu et al. <i>Nanostructured thermoelectric materials Cu_xBi₂(Te,Se,S)₃</i>	W12.2 G. Pernot et al. <i>Thermal conductivity of thin films TbAs:InGAs measured using time domain thermoreflectance</i>
16:00-16:15	W10.3 Y. Grin <i>Atomic interactions and thermoelectric activity of intermetallic compounds</i>	W11.3 S. Sumithra et al. <i>Effect of NiTe nanoinclusions on thermoelectric properties of Bi₂Te₃</i>	W12.3 Y. Zhang et al. <i>Profiling local thermoelectric properties by a novel scanning thermal microscopy</i>
16:15-16:30		W11.4 R.P. Gupta et al. <i>Thermoelectric materials made from inorganic colloidal nanocrystals</i>	W12.4 D. Cederkrantz, et al. <i>A comparison between the laser flash method and the transient plane source technique for thermal conductivity measurements</i>
16:30-16:45	W10.4 P. Rogl <i>Clathrate type I thermoelectrics: Ba₈M_xVacancy_y{Ge,Si}_{46-x-y} barium versus strontium compounds</i>	W11.5 C. Kim et al., <i>Synthesis of BiTe-type nanoparticles and study on their transport properties for ZT enhancement</i>	W12.5 R. McCarty et al., <i>Methodology for minimizing losses for Harman technique at high temperatures</i>
16:45-17:00	W10.5 X. Yan, et al. <i>Thermoelectric properties of type-I clathrates in the quaternary system Ba-Cu-Si-Ge</i>	W11.6 S.-S. Lin, et al. <i>Effect of electric current stressing on thermoelectric properties of Bi-Se-Te based nanostructure materials prepared by powder metallurgy</i>	W12.6 H. Lo and R.J. Ram, <i>Sub-micron mapping thermal conductivity of thermoelectric thin films</i>
17:00-17:15			W12.7 R.P. Bhatta et al. <i>Thermal conductivity of platinum and lead telluride microwires at 725 K by 3ω method</i>

19:00-21:30 Banquet, Governor's ABCD

Thursday Morning 8:15-10:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session H1: Novel Materials IV <i>Chair: Thierry Caillat</i>	Governor's D Session H2: PbTe-Based <i>Chair: Vladimir Jovovic</i>	Peninsula Room Session H3: Generators III <i>Chair: Lon Bell</i>
8:15-8:30	H1.1 D. Moore et al. <i>[(PbSe)_{1.16}]_m(TiSe₂)_n ferrecrystals: interwoven semiconductors with designed nanoarchitecture and tunable properties</i>	H2.1 Jovovic et al. <i>High performing PbTe-based thermoelectric materials</i>	H3.1 B. Poudel et al. <i>Solar thermoelectric generators: electrical and thermal power cogeneration</i>
8:30-8:45		H2.2 J. Androulakis et al. <i>Interband scattering in p-type K and Na co-doped PbTe: the importance of a heavy effective mass</i>	H3.2 L. Miao et al. <i>Feasibility study on solar thermal power generation system by thermoelectric module installed at evacuated tubular collector with trough concentrator</i>
8:45-9:00	H1.2 M. Ohta, et al. <i>Thermoelectric properties of misfit layer sulfides (LnS)_xCrS₂ (Ln:La, Pr, Nd, Gd) prepared by CS₂ sulfurization</i>	H2.3 S. Girard et al. <i>Shape- controlled nanostructures and band structure engineering in PbTe-PbS thermoelectric materials doped with Na</i>	H3.3 A. Moser, et al. <i>Thermoelectric harvesting from transient ambient temperature gradients</i>
9:00-9:15	H1.3 C. Wan et al <i>TiS₂- based organic/inorganic superlattice as a thermoelectric material</i>	H2.4 G.J. Snyder <i>PbTe: better than we thought</i>	H3.4 A. Rezanian and L.A. Rosendahl <i>A new configuration of the microchannels to reduce cooling power loss through heat sink</i>
9:15-9:30	H1.4 M. Beekman, et al. <i>Synthesis, structure, and electrical transport properties of [(SnSe)_{1.04}]_m[MoSe₂]_n nanostructured intergrowths</i>		H3.5 Y. Sasaki et al. <i>Fluid directions on heat exchange in thermoelectric generator</i>
9:30-9:45	H1.5 M. Zhou et al. <i>Thermoelectric properties of Ni-intercalated TiSe_{1.8}S_{0.2}</i>	H2.5 Y. Pei and G.J. Snyder <i>High performance thermoelectric PbTe due to band structure complexity and nanostructures</i>	H3.6 K. Mizuno et al. <i>Development of a thermal buffering device to cope with temperature fluctuations for a thermoelectric power generator</i>
9:45-10:00	H1.6 E. Guilmeau et al. <i>Thermoelectric properties of layered Cu_xTiS₂ compounds</i>	H2.6 C.-I. Wu, et al. <i>Lead selenide based thermoelectric materials</i>	H3.7 C. Lertsatitthanakorn et al <i>Performance study of a double pass thermoelectric solar air collector with flat plate reflectors</i>

10:00-10:30 Coffee Break, Governor's pre-function area

Thursday Morning 10:30-12:00

	<p>Governor's D Plenary Awards Session <i>Chair: Donald Morelli</i></p>
10:30-11:15	<p>Young Investigator Award Talk Dr. Eric Toberer Colorado School of Mines</p>
11:15-12:00	<p>Outstanding Achievement in Thermoelectrics Award Talk Dr. Glen Slack Illinois Institute of Technology</p>

12:00-13:30 Lunch, Governor's AB

Thursday Afternoon 13:30-15:00

	SESSION A	SESSION B	SESSION C
	Governor's C Session H4: Theory II <i>Chair: Bhanu Mahanti</i>	Governor's D Session H5: Various Antimonides and Tellurides <i>Chair: Jeff Sharp</i>	Michigan CD Session H6: Characterization IV/Synthesis <i>Chair: Edgar Lara-Curzio</i>
13:30-13:45	H4.1 T. Takeuchi <i>Condition of electronic structure for practical thermoelectric materials</i>	H5.1 N. Ghafouri et al <i>Effect of substrates on co-evaporated Bi₂Te₃ and Sb₂Te₃ thin films</i>	H6.1 P. Majsztrik et al. <i>The effect of creep deformation on the microstructure and electrical resistivity of bismuth telluride</i>
13:45-14:00		H5.2 H. Takahashi et al. <i>High-mobility transport of FeSb₂ with ppm-level carrier concentration</i>	H6.2 D. Vasilevsky et al. <i>Thermoelectric and mechanical properties of novel hot extruded PbTe n-type material</i>
14:00-14:15	H4.2 S. Barabash et al. <i>Phonon softening and low thermal conductivity in cubic I-VI semiconductors</i>	H5.3 N. Nandihalli et al. <i>Thermoelectric property tuning via formation of nanocomposites based on Mo₃Sb_{3,4}Te_{1,6} materials</i>	H6.3 M. Jaegle et al <i>Innovative characterization and optimization for thermoelectric thin films</i>
14:15-14:30	H4.3 J.W. Doak and C. Wolverton <i>Coherent phase stability of IV-VI rocksalt semiconductor alloys</i>	H5.4 C.-K. Huang et al. <i>Thermoelectric properties of La_{3-x}Te₄-based materials synthesized by ball milling technique</i>	
14:30-14:45	H4.4 G.S. Pomrehn et al <i>Phase equilibria in thermoelectric zinc antimonides: a thermodynamic study from first principles</i>	H5.5 S.J. Limmer et al. <i>Electrochemical deposition of Bi₂(Te,Se)₃ nanowire arrays on silicon</i>	H6.4 S.H. Sadat et al. <i>Nanoscale thermometry using point contact thermocouples</i>
14:45-15:00	H4.5 R. Yu, et al. <i>Molecular dynamics simulation of the mechanical properties of Mg₂Si</i>	H5.6 D.-B. Xiong, et al. <i>Microstructures and thermoelectric properties of nanostructured Mn-doped zinc antimonides</i>	H6.5 A. LaLonde, et al. <i>Rapid consolidation of powdered materials by induction hot pressing</i>

POSTERS

ICT Sorting Category: A1: theoretical study of bulk materials

P1. Bulk modulus and band structure of group IV and group VI doped ternary PbTe alloys by first principles

Ashoka Bali and Ramesh Chandra Mallik

Thermoelectric Materials and Device Laboratory, Department of Physics, Indian Institute of Science, Bangalore, 560 012, India

P2. Search for resonant scatterers in bismuth and bismuth antimony alloys - first principles study

Bartłomiej Wiendlocha^{1,2}, Hyungyu Jin¹, Janusz Tobola², Stanislaw Kaprzyk², Joseph P. Heremans^{1,3}

¹*Department of Mechanical and Aerospace Engineering, Ohio State University, Columbus, Ohio 43210, USA;* ²*Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Al. Mickiewicza 30, 30-059 Cracow, Poland;* ³*Department of Physics, Ohio State University, Columbus, Ohio 43210, USA*

P3. Ab initio calculation of elastic constants and deformation potentials of CoSb₃

A. Zhou, L. S. Liu, C. C. Shu, P. C. Zhai

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, China

P4. Electronic structures and transport properties of double filled CoSb₃: a theory study

Cui-Cui Shu, An Zhou, Li-Sheng Liu, and Peng-Cheng Zhai

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China

P5. A close look inside the Mott relation: its validity, limitations and potential

Yibin Gao¹, G. Jeffrey Snyder², and Joseph P Heremans^{1,3}

¹*Department of Mechanical and Aerospace Engineering, Ohio State University, Columbus, Ohio 43210;* ²*California Institute of Technology, Pasadena, California;*

³*Department of Physics, Ohio State University, Columbus, Ohio 43210*

P6. Thermoelectric properties of isoelectronic, highly mismatched alloys

Joo-Hyoung Lee and Jeffrey C. Grossman

Department of Materials Science and Engineering, Massachusetts Institute of Technology

P7. Molecular dynamics study on bulk β -Zn₄Sb₃ mechanical properties: vacancy and temperature effects

Guodong Li, Yao Li, Xuqiu Yang, An Zhou, Lisheng Liu and Pengcheng Zhai

State Key Laboratory of Advanced Technology of Materials Synthesis and Processing, Wuhan University of Technology

P8. Effect of magnetic and nonmagnetic dopants on electron transport properties in $Mg_2(Si-Sn)$ and $Mg_2(Si-Ge)$ from electronic structure calculations

Piotr Zwolenski, Janusz Tobola and Stanislaw Kaprzyk
Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Cracow, Poland

ICT Sorting Category: A2: nanoscale and low-dimension induced effects

P9. Unstructured-grid-based MC simulations of phonon transport at nanoscale

Mei-Jiau Huang
Mechanical Engineering Department, National Taiwan University

P10. Large enhancement of the thermoelectric figure of merit in a nanostructured quantum well

Avto Tavkhelidze
Tbilisi State University, Chavchavadze Avenue 13, Tbilisi 0179, Georgia

P11. Thermoelectric effects on micro- and nano-scale

S.V. Ordin and W.N. Wang
¹Physico-Technical Institute of A.F. Ioffe of the Russian Academy of Sciences, St. Petersburg,
²Bath University, Great Britain

P12. MonteCarlo study of the strained Si/Si_xGe_{1-x} superlattice with the ballistic electron transport and the phonon-phonon scatterings algorithms

Sangho Kim
Department of Electrical and Computer Engineering, University of Wisconsin at Madison

P13. Transport-coefficient dependence of current-induced cooling effect in a two-dimensional electron gas

Naomi Hirayama¹, Akira Endo², Kazuhiro Fujita², Yasuhiro Hasegawa³, Naomichi Hatano¹, Hiroaki Nakamura⁴, Ryōen Shirasaki⁵ and Kenji Yonemitsu⁶
¹IIS, U. Tokyo, ²ISSP, U. Tokyo, ³Saitama U., ⁴NIFS, ⁵Yokohama National U., ⁶IMS

P14. Influence of ZnO inclusions on the transport properties of $CoSb_3$

C. Chubilleau¹, B. Lenoir¹, P. Masschelein¹, A. Dauscher¹, C. Godart²
¹Institut Jean Lamour, UMR 7198, UMR 7198 CNRS - Nancy-Université - UPV-Metz, Département Chimie et Physique des Solides et des Surfaces, Ecole Nationale Supérieure des Mines de Nancy, Parc de Saurupt, F-54042 NANCY Cedex, France, ²ICMPE- CMTR, CNRS-UMR 7182, 2-8, rue H. Dunant, 94320 THIAIS, France

P15. Switching effect in transverse thermopower in Bi microwires

L. A. Konopko^{1,2}, T. E. Huber³ and A. A. Nikolaeva^{1,2}

¹Institute of Electronic Engineering and Nanotechnologies, Academy of Sciences of Moldova, Chisinau, MD-2028, Moldova; ²International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw 53-421, Poland; ³Howard University, 500 College St. N.W., Washington, DC 20059, USA

P16. Electrical resistance in PbTe quantum wires

Sitangshu Bhattacharya¹ and Ramesh Chandra Mallik²

¹Nanoscale Device Research Laboratory, Center for Electronics Design and Technology, Indian Institute of Science, Bangalore, 560 012, India; ²Thermoelectric Materials and Device Laboratory, Department of Physics, Indian Institute of Science, Bangalore 560 012, India

P17. Overcoming the challenges of non-uniform electrochemical currents to control compositional uniformity during the synthesis of Bi_{1-x}Sb_x nanowire arrays

W. G. Yelton¹, S. J. Limmer¹, M.P. Siegal¹, D. L. Medlin², J. L. Lensch-Falk², and D. L. Overmyer¹

¹Sandia National Laboratories, Albuquerque, NM; ²Sandia National Laboratories, Livermore, CA

ICT Sorting Category: A3: novel concepts and related physical phenomenon

P18. Narrow "d" and "f" band metals for improved thermoelectric and/or magnetothermoelectric performance

C. F. Gallo, Jason Wozniak and Brian Seaver
Superconix, Inc.

P19. Thermomagnetic effect in the quantum hall system

Ryōen Shirasaki¹, Akira Endo², Naomichi Hatano³, and Hiroaki Nakamura⁴

¹Yokohama National U., ²ISSP, U. Tokyo, ³IIS, U. Tokyo, ⁴NIFS

P20. Giant electrocaloric effect in ferroelectric polymers and their applications for high efficiency cooling devices

Q. M. Zhang¹, S. G. Lu¹, Xinyu Li¹, Haiming Gu¹, Minren Lin¹, Xiaoshi Qian¹, J. P. Cheng¹, Ailen Cheng², Greg Nellis³, and Brent Craven⁴

¹Electrical Engineering Department and Materials Research Institute, The Pennsylvania State University

²Strategic Polymer Sciences Inc. State College, PA

³Department of Mechanical Engineering, University of Wisconsin, Madison

⁴Applied Research Laboratory, The Pennsylvania State University and
Electrical Engineering Department and Materials Research Institute
The Pennsylvania State University

ICT Sorting Category: B1: skutterudites

P21. The role of FeSb₂ and NbSb₂ in the stability of Mm_{0.86}Fe_{3.5}Co_{0.5}Sb₁₂ skutterudites

L. Zhang, D. Morelli and J. Sakamoto

Department of Chemical Engineering and Materials Science, Michigan State University, East Lansing, MI 48824

P22. High-temperature stability of thermoelectric skutterudite In_{0.25}Co₃FeSb₁₂

Kwan-Ho Park and Il-Ho Kim

Department of Materials Science and Engineering/RIC-ReSEM, Chungju National University, 50 Daehangno, Chungju, Chungbuk 380-702, Korea

P23. Structural and electrical properties of thermoelectric CoSb₃ thin films with different composition and thickness

M. Daniel, C. Brombacher, G. Beddies, and M. Albrecht

Institute of Physics, Chemnitz University of Technology, D-09107, Germany

P24. Low thermal conductivity and enhanced thermoelectric performance in the Ca_{0.5}Ce_{0.5}Fe_{4-x}Ni_xSb₁₂ skutterudites

Gangjian Tan, Han Li, Yonggao Yan, Xinfeng Tang

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 40070, China

P25. Ab initio study of p-type IFe₄Sb₁₂ (I = Na, K, Ca, Sr, Ba, La, Ce, Pr, and Yb)

J. Yang, P. Qiu, R. Liu, L. Xi, W. Zhang, and L. Chen

State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences

P26. Residual strength degradation model for low cycle fatigue of CoSb₃ Skutterudites compounds

Zhong-wei Ruan¹, Li-sheng-Liu², Peng-cheng Zhai², Peng-fei Wen¹, and Qing-jie Zhang²

¹Department of Engineering Structure and Mechanics, Wuhan University of Technology, Wuhan 430070, China; ²State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China

P27. Effect of In impurity on thermoelectric properties of Ba and In double-filled skutterudite materials

Xuan Yang, Wenyu Zhao, Ping Wei, Jian Yu, Hua Zhou and Qingjie Zhang

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology

P28. Effect of addition of alumina nanoparticles on thermoelectric properties of La-filled skutterudite CoSb₃ compounds

Masaki Matsuhara¹ and Takashi Itoh²

¹Department of Materials Science and Engineering, Nagoya University

²EcoTopia Science Institute, Nagoya University

P29. Thermoelectric properties of trisubstituted skutterudite $\text{Co}_4\text{Sb}_{11}\text{Ge}_{1-x-y}\text{Te}_x\text{Se}_y$ compounds

Bo Duan, PengCheng Zhai, LiSheng Liu

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology

P30. Effect of Excessive Sb on Thermoelectric Properties of p-Type Ba and In Double-filled Iron-based Skutterudite Materials

Jian Yu, Wenyu Zhao, Ping Wei, Hua Zhou and Qingjie Zhang

State key laboratory of advanced technology for materials synthesis and processing, Wuhan University of Technology

P31. Development of highly efficient n-type skutterudites

G Rogl^{1,2}, A Grytsiv¹, N Melnychenko-Koblynk¹, E Bauer² and P Rogl¹

¹Institute of Physical Chemistry, University of Vienna,

²Institute of Solid State Physics, University of Technology, Wien, Austria

ICT Sorting Category: B2: oxides

P32. Textured thermoelectric oxides prepared by rapid sintering

J. Khaliq¹, H. Yan¹, K. Simpson², M.J. Reece¹

¹School of Engineering and Materials Science, and Nanoforce Technology Limited, Queen Mary University of London, Mile End Road, London, E1 4NS, UK; ²European Thermodynamics, 8 Priory Business Park, Kibworth, Leicester LE8 0RX, UK.

P33. Improved thermoelectric properties of $\text{Ca}_{0.98}\text{RE}_{0.02}\text{MnO}_{3-d}$ (RE = Sm, Gd and Dy)

Chia-Jyi Liu, Ankam Bhaskar and J. J. Yuan

Department of Physics, National Changhua University of Education, Changhua 500, Taiwan

P34. Microstructural analysis and high temperature thermoelectric properties of Fe-, Zr-, and Ba-doped calcium cobaltite (CCO-349) thin films

Ryan D. Snyder¹, Evan L. Thomas², Xueyan Song³, Betty T. Quinton¹, Song Chen³, Steven M. Goodrich⁴, Mary L. Galaska⁴, Winnie Wong-Ng⁵ and Paul N. Barnes⁶

¹Air Force Research Laboratory/RZPG, WPAFB, 2645 Fifth Street, Wright-Patterson Air Force Base, OH 45433-7919; ²University of Dayton Research Institute/Air Force Research Laboratory-WPAFB, Metals and Ceramics Division, 300 College Park, Dayton, OH 45469-0073; ³Department of Mechanical and Aerospace Engineering, West Virginia University, Engineering Sciences Bldg. Room 537, Evansdale Dr., Morgantown, WV 26506-6106; ⁴University of Dayton Research Institute, Metals and Ceramics Division, 300 College Park, Dayton, OH 45469; ⁵National Institute of Standards and Technology, Ceramics Division, 100 Bureau Dr. MS 8520, Gaithersburg, MD 20899-5820; ⁶Army Research Laboratory, Power Components, 2800 Powder Mill Rd., Adelphi, MD 20783

P35. Exfoliation of thermoelectric cobalt oxide by soft chemical method

J.Y. Kim, J.I. Kim, and W.S. Seo

Korea Institute of Ceramic Engineering and Technology

P36. Thermoelectric properties of electron-doped SrMnO₃ single crystal with cubic perovskite structure

T. Suzuki¹, H. Sakai¹, Y. Taguchi^{1,2}, and Y. Tokura^{1,2,3,4}

¹CMRG RIKEN, ²CERG RIKEN, ³Univ. of Tokyo, ⁴ERATO-MF

P37. Improvement of electrical contact between TE material and Ni electrode interface by application of a buffer layer

Koya Arai¹, Masanori Matsubara¹, Tatsuya Sakamoto¹, Tohru Kineri², Yasuo Kogo¹, Tsutomu Iida¹ and Keishi Nishio¹

¹Department of Material Science and Technology, Tokyo University of Science; ²Department of Applied Chemistry, Tokyo University of Science, Yamaguchi

P38. The fabrication of high performance polycrystalline Ca₃Co₄O₉ using conventional sintering process

O-Jong Kwon¹, Wook Jo², Jae-Yeol Kim¹, Hyunwoo Yoo^{1,3}, Jin-Sang Kim³, Kyeongdal Choi⁴, Chan Park¹

¹Seoul National University, ²Technische Universität Darmstadt; ³Korea Institute of Science and Technology; ⁴Korea Polytechnic University

P39. Thermoelectric and electrical properties of Li_{0.5-x}Zn_xRh₂O₄

Yuuta Nakamura and Hiroshi Irie

Univ. of Yamanashi

P40. Synthesis and growth mechanism of single-phase SrTiO₃ nanocubes for thermoelectric materials

Nam-Hee Park¹, Yifeng Wang¹, Chunlei Wan^{1,2} and Kunihito Koumoto^{1,2}

¹Graduate School of Engineering, Nagoya University, Nagoya 464-8603, Japan; ²CREST, Japan Science and Technology Agency, Tokyo 102-0075, Japan

P41. Microstructure and thermoelectric properties of misfit-layered cobalt oxides with metallic nano-inclusions prepared by a printing technique

Ngo Van Nong, Alfred Junio Samson, Nini Pryds and Søren Linderøth

Fuel Cells and Solid State Chemistry Division, Risø National Laboratory for Sustainable Energy, Denmark Technical University, 4000 Roskilde, Denmark

P42. Microstructures and thermoelectric properties of sintered $\text{Ca}_3\text{Co}_4\text{O}_9$ -based oxide

Takao Morimura, Masayuki Hasaka, Shin-ichiro Kondo, Hiromichi Nakashima
Graduate School of Engineering, Nagasaki University

P43. Transport and thermoelectric properties LCuO-Sr polycrystalline ceramics

J. E. Rodríguez
Department of Physics, Universidad Nacional de Colombia

P44. Thermoelectric properties of Niobium doped Strontium Titanate thin films

S.R. Sarath Kumar, and H.N. Alshareef
King Abdullah University of Science and Technology

ICT Sorting Category: B3: silicides & Heusler compounds

P45. Solid-state synthesis and thermoelectric properties of Al-doped Mg_2Si

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²Department of Materials Science and Engineering/RIC-ReSEM, Chungju National University, Chungju, Korea

P46. Synthesis of bulk nanostructured higher manganese silicides for thermoelectric applications

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¹Department of Chemistry, University of Wisconsin – Madison

²Department of Mechanical Engineering, The University of Texas at Austin

³Materials Science and Engineering Program, Texas Materials Institute, The University of Texas at Austin

P47. The effects of heavy element substitution on electric structure and lattice thermal conductivity of Fe_2VAl thermoelectric material

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²National Institute of Advanced Industrial Science and Technology, Materials Research Institute for Sustainable Development, Nagoya

³EcoTopia Science Institute, Nagoya University

P48. The study on thermoelectric performance in $\text{Mg}_2\text{Si}_{0.5}\text{Ge}_{0.5}$ by Sb, La co-doping

Xiaoyuan Zhou¹, Guoyu Wang¹, Xianli Su^{1,3}, Hang Chi¹, James R. Salvador², Wei Liu³, Xinfeng Tang³ and Ctirad Uher¹

¹Department of Physics, University of Michigan

²Chemical Sciences and Materials Systems Laboratory, GM Global Research

³State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology

P49. Thermoelectric properties of Sn-based half-Heusler nanocomposites

Dexuan Huo, Luobing Liao, Shaopeng Cui, Weitao Su, and Lingwei Li
Institute of Materials Physics, Hangzhou Dianzi University, Hangzhou, China

P50. Improved thermoelectric properties of higher manganese silicide $Mn_{1-x}Re_xSi_{1.80}$ by doping Re on Mn site

Wenhui Luo, Wenjie Xie, Fan Fu, Xinfeng Tang
State Key Laboratory of Advanced Technology for Material Synthesis and Processing, Wuhan University of Technology

P51. Cold-pressing synthesis and thermoelectric properties of higher manganese silicides for waste heat recovery

Xi Chen, Jianshi Zhou, Li Shi
Texas Materials Institute, the University of Texas at Austin

P52. Doping effects on figure of merits in a Mg_2Sn System

Soon-Mok Choi¹, Il-Ho Kim², Sun-Uk Kim³, Won-Seon Seo¹, Tae-Ho An^{1,4}, and Chan Park⁴
¹Green Ceramics Division, Korea Institute of Ceramic Engineering and Technology (KICET), Seoul, Republic of Korea

²Department of Material Science and Engineering, Chung-ju National University, Chung-buk, Republic of Korea

³Functional Materials Research Department, Research Institute of Industrial Science and Technology (RIST), Pohang, Republic of Korea

⁴School of Materials Science and Engineering, Seoul National University, Republic of Korea

P53. The use of transition metal silicides to reduce the contact resistance between the electrode and sintered n-type Mg_2Si

T. Sakamoto, T. Iida, Y. Honda, M. Tada, T. Sekiguchi, K. Nishio, Y. Kogo, and Y. Takanashi
Department of Materials Science and Technology, Tokyo University of Science

P54. Effects of Ru substitution for Mn in the Si_2Ti -type Al-Mn-Si alloy

Akio Yamamoto¹, Tsunehiro Takeuchi^{1,2}

¹Department of Crystalline Materials Science, Nagoya University

²EcoTopia Science Institute, Nagoya University

P55. Development of Higher Manganese Silicide for Thermoelectric Applications

Y. Sadia and Y. Gelbstein
Ben Gurion University of the Negev, Israel

P56. Thermoelectric Properties of Mg_2Si Based Compounds Synthesized Using Magnesium Alloy

Kento Hagio¹ and Takashi Itoh²

¹Department of Materials Science and Engineering, Nagoya University

²EcoTopia Science Institute, Nagoya University

P57. Thermoelectric properties of off-stoichiometric Ti-Ni-Sn half-Heusler systems

Hirofumi Hazama, Masato Matsubara, Ryoji Asahi
Toyota Central R&D Labs., Inc.

P58. Large Seebeck Coefficients of Protonated Titanate Nanotubes for High-Temperature Thermoelectric Conversion

L. Miao¹, S. Tanemura², R. Huang³, C.Y.Liu¹, C.M.Huang¹, and G. Xu¹

¹Key Laboratory for Renewable Energy and Gas Hydrates, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences; ² Nanostructures Research Laboratory, Japan Fine Ceramics Center; ³Key Laboratory of Polarized Materials and Devices, Ministry of Education, East China Normal University

P59. Structure and thermoelectric properties of MgAgSb

Alan J Thompson¹, Jeff W Sharp¹, Moreira Dos Santos², Melanie J Kirkham², and Claudia J Rawn²

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²Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA

P60. Effects of Ge/Cr Doping on the Thermoelectric Properties of Higher Manganese Silicides

Y. J. Shi, Q. M. Lu, X. Zhang, J. X. Zhang, G. Liu

Key Lab. of Advanced Functional Materials, Ministry of Education, College of Materials Science and Engineering, Beijing University of Technology

P61. Thermoelectric properties of Mg₂Si_{0.5-x}(GaSb)_xSn_{0.5} (0 ≤ x ≤ 0.1)

Z. L. Du, T. J. Zhu, X. B. Zhao

Univ. of Zhejiang

P62. Low-temperature Thermoelectric Properties of Fe₂VAl with Partial Cobalt Doping

Chang Liu, Eric Skoug and Donald Morelli

Department of Chemical Engineering and Materials Science, Michigan State University,

ICT Sorting Category: B4: clathrates & zintl compounds

P63. Synthesis, structural characteristics, and thermoelectric properties of type I clathrates

*A*₈Zn₁₈As₂₈ (*A* = K, Rb, Cs) and Cs₈Cd₁₈As₂₈

Hua He and Svilen Bobev

Department of Chemistry and Biochemistry, University of Delaware

P64. Preparation and thermoelectric properties of BaMn_{2-x}Zn_xSb₂ Zintl compounds

H. F. Wang, K. F. Cai

Tongji University, Functional Materials Research Laboratory, Shanghai, China

P65. Thermoelectric properties of type-I clathrates in the quaternary system Ba-Cu-Si-Ge

X. Yan,^{1,2} E. Bauer,¹ P. Rogl,² and S. Paschen^{1,3}

¹Institute of Solid State Physics, Vienna University of Technology

²Institute of Physical Chemistry, University of Vienna

P66. Study of host atom structures and electronic structures of Sb or Al doped Type-VIII Ba₈Ga₁₆Sn₃₀ clathrates

Yasushi Kono^{1,2}, Koji Akai³, Hiroshi Nozaki⁴, Nobuyuki Ohya¹, Takashi Taguchi¹, Shukang Deng⁵, Yuhta Saiga⁵, Toshiro Takabatake⁵, and Setsuo Yamamoto²

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³Media and Information Technology Center, Yamaguchi University

⁴Toyota Central R&D Labs., Inc

⁵Department of Quantum Matter, ADSM, Hiroshima University

P67. Thermoelectric properties of Ba₈Ga₁₆Ge₃₀ clathrate with TiO₂ nano-inclusions

R. Heijl¹, D. Cederkrantz¹, M. Nygren², and A. E. C. Palmqvist¹

¹Department of Chemical and Biological Engineering, Chalmers University of Technology

²Department of Inorganic Chemistry, Arrhenius Laboratory, Stockholm University

P68. Effects of host atom vacancies on electronic structure and thermoelectric properties in type-VIII Sn-clathrate Ba₈Ga₁₆Sn₃₀

K. Akai¹, K. Kishimoto², Y. Kono^{2,3}, T. Koyanagi² and S. Yamamoto²

¹MITC, Yamaguchi University

²Graduate School of Science and Engineering, Yamaguchi University

³Denso Corporation Research Lab

P69. Type-VIII clathrate Ba₈Ga₁₆Sn₃₀ doped with Cu: A high-performance thermoelectric material for intermediate-temperature application

Yuta Saiga¹, Shukang Deng^{1,2}, Kousuke Kajisa¹, and Toshiro Takabatake^{1,3}

¹Department of Quantum Matter, ADSM and ³IAMR, Hiroshima University

²Education Ministry Key Laboratory of Renewable Energy Advanced Materials and

Manufacturing Technology, Yunan Normal University

P70. Thermoelectric and magnetic properties of Ce Doped Yb₁₄MnSb₁₁

Jason H. Grebenkemper, Jennifer Karolewski, John H. Roudebush, Tanghong Yi, and Susan M. Kauzlarich

Department of Chemistry, University of California-Davis

P71. Crystal structure, chemical bonding and thermoelectric properties of the p-type clathrate - I Ba₈Au_{5.3}Ge_{40.7}

H. Zhang^{1,2}, C. Candolfi¹, H. Borrmann¹, N. Oeschler¹, W. Schnelle¹,

I. Veremchuk¹, M. Schmidt¹, U. Burkhardt¹, M. Baitinger¹, J. T. Zhao², and Yu. Grin¹

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²Key Laboratory of Transparent Opto-Functional Inorganic Materials of Chinese Academy of Sciences, Shanghai Institute of Ceramics

P72. Different physical properties in n/p- $Ba_8Ga_{16}Ge_{30}$

Jingtao Xu¹, Jiazhen Wu², Satoshi Heguri², Tanabe Yoichi¹, Gang Mu², Jun Tang³, and Katsumi Tanigaki^{1,2}

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²Department of Physics, Tohoku University

³Department of Physics, Sichuan University

ICT Sorting Category: B5: antimonides & tellurides

P73. Thermoelectric properties of $Bi_{85}Sb_{15-x}Pb_x$ prepared by high-pressure sintering

Song Chunmei¹, Fan Lilue¹, Huang Rongjin², Gong Linghui², Li Laifeng²

¹Department of Physics, Zunyi Normal College

²Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences

P74. Thermoelectric performance of p-type $BiSbTe/Zn_4Sb_3$ composites prepared by zone melting

Ting Zhang, Jun Jiang, Qiushi Zhang, Yukun Xiao, Wei Li, and Gaojie Xu

Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences

P75. Characterization of the thermoelectric properties of electrodeposited thin films of telluride compounds

Yi Ma¹, Waruna Wijesekara¹, Elisabet Ahlberg², Ye Sun³, Bo Brummerstedt Iversen³, and Anders E. C. Palmqvist¹

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³Dept. of Chemistry and iNano, Aarhus University

P76. Withdrawn

P77. Improvement of ZT and mechanical strength in p- and n-type $PbTe$

Qinyong Zhang¹, Weishu Liu¹, Qian Zhang¹, Hui Wang¹, Bo Yu¹, Hengzhi Wang¹, Dezhi Wang¹, M. S. Dresselhaus³, Gang Chen², and Zhifeng Ren¹

¹Department of Physics, Boston College

²Department of Mechanical Engineering, Massachusetts Institute of Technology

³Department of Physics and Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology

P78. Thermopower gradient in $PtSb_2$ single crystal

Martin Søndergaard, Mogens Christensen and Bo B. Iversen

Centre for Energy Materials and Centre for Materials Crystallography, Department of Chemistry and iNANO, University of Aarhus

P79. Nanostructure, excitations, and thermoelectric properties of Bi₂Te₃ based nanomaterials

N. Peranio¹, O. Eibl¹, W. Töllner², D. Bessas², M. Winkler², J. König², A. Hashibon², V. Pacheco², K. Nielsch², R. Hermann², H. Böttner², C. Elsässer², and J. Schmidt²

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P80. Effect of nano-ZrW₂O₈ on the thermoelectric properties of Bi₈₅Sb₁₅/ZrW₂O₈ composites

Min Zhou, Zhen Chen, Xinxin Chu, and Laifeng Li

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P81. Thermoelectric performance of p-type Bi-Sb-Sn materials prepared by pressureless sintering

Zhen Chen^{1,2}, Min Zhou¹, Rongjin Huang¹, Chunmei Song³, Yuan Zhou¹ and Laifeng Li¹

¹The Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences

²Graduate University of Chinese Academy of Sciences

³Department of Physics, Zunyi Normal College

P82. The effect of n-type Bi₂Te₃ particles synthesized by electrochemical methods on the thermoelectric properties of Bi₂Te₃ based nanocomposites

Wen-Jin Li, Way-ling Yu, Chia-Ying Yen and Hsin-Hwa Chen

Industrial Technology Research Institute

P83. Thermoelectric properties of TlGdTe₂ and Tl₉GdTe₆

C. R. Sankar, S. Bangarigadu-Sanasy and H. Kleinke

Department of Chemistry, University of Waterloo

P84. Reduced thermal conductivity in vacancy compounds of thermoelectric materials

Hao Yang and Donald T. Morelli

Michigan State University

P85. Single crystal growth of Bi-Sb-Te thermoelectric materials by halide chemical vapor transport technique

Mikio Koyano, Junya Tanaka, Koichiro Suekuni and Tomoki Ariga

School of Materials Science, Japan Advanced Institute of Science and Technology

P86. Thermoelectric properties of Cd doped p-type bismuth antimony telluride films

Kwang-Chon Kim^{1,2}, Hyun woo You³, Won Chel Choi¹, Hyun Jae Kim², Jin-Sang Kim¹

¹Electronic Materials Center, Korea Institute of Science and Technology

²School of Electrical and Electronic Engineering, Yonsei University

³Department of Materials Science and Engineering, Seoul National University

P87. Synthesis of Bi-Sb-Te thermoelectric powder by an oxide-reduction process

Gil-Geun Lee¹ and Gook-Hyun Ha²

¹Pukyong National University
²Korea Institute of Materials Science

P88. Thermoelectric properties of $\text{Bi}_{0.5}\text{Sb}_{1.5}\text{Te}_3$ sintered body fabricated by mechanical milling and spark plasma sintering processes

Gil-Geun Lee¹ and Gook-Hyun Ha²
¹Pukyong National University
²Korea Institute of Materials Science

P89. Thermoelectric properties of Mn doped Cu_2SnSe_3 and Cu_3SbSe_4 compounds

Xu Lu¹ and Donald Morelli^{1,2}
¹Department of Physics & Astronomy, Michigan State University
²Department of Chemical Engineering & Material Science, Michigan State University

P90. Thermoelectric properties of Na and K doped PbTe-PbSe

R. Korkosz¹, J. Androulakis¹, and M.G. Kanatzidis^{1,2}
¹Department of Chemistry, Northwestern University
²Materials Science Division, Argonne National Laboratory

P91. Reevaluation of $\text{PbTe}_{1-x}\text{I}_x$ as high performance n-type thermoelectric material

Aaron LaLonde, Yanzhong Pei, and Jeff Snyder
California Institute of Technology

P92. The effect of annealing in controlled vapor pressure on the thermoelectric properties of rf sputtered Bi_2Te_3 film

Hyo-Jung Kim^{1,2}, Ju-Hyuk Yim^{2,3}, Won Chel Choi², Chan Park^{1,4} and Jin-Sang Kim²
¹Department of Material Science and Engineering, Seoul National University
²Electronic Materials Center, Korea Institute of Science and Technology
³School of Electrical and Engineering, Yonsei University
⁴Research Institute of Advanced Materials, Seoul National University

P93. Local structural characterization of thermoelectric LAST-m material ($\text{AgPb}_m\text{SbTe}_{2+m}$, $m = 6, 10$ and 18)

P. Bauer Pereira^{1,2}, S. Perlt³, T. Höche³, J. Dadda⁴, E. Müller⁴, Raphaël P. Hermann^{1,2}
¹Jülich Centre for Neutron Science JCNS and Peter Grünberg Institute
²Faculté des Sciences, Université de Liège
³Leibniz Institute of Surface Modification (IOM)
⁴Deutsches Zentrum für Luft- und Raumfahrt, Institut für Werkstoff-Forschung, Thermoelektrische Materialien und Systeme

P94. Thermoelectric characteristics of nanostructured $(\text{Bi,Sb})_2\text{Te}_3$ bulks processed with nanodispersion

Y. H. Yeo, M. Y. Kim, J. Y. Choi, B. K. Yoo and T. S. Oh
Department of Materials Science and Engineering, Hongik University

P95. Effects of nanopowder dispersion on thermoelectric characteristics of n-type $\text{Bi}_2(\text{Te},\text{Se})_3$ nanocomposites

M. R. Noh, D. H. Park, M. Y. Kim and T. S. Oh
Department of Materials Science and Engineering, Hongik University

P96. The effects of Hg-doping on electrical properties in n-type Bi_2Te_3 films deposited by MOCVD

HyunWoo You^{1,2}, Kwang-Chon Kima³, Chan Park^{2,4}, and Jin-Sang Kima¹

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²Department of Materials Science and Engineering, Seoul National University

³School of Electrical and Engineering, Yonsei University

⁴Research Institute of Advanced Materials, Seoul National University

P97. Thermoelectric properties of PbBi_2Te_4 bulk with nano structure

Young-Jae Lee¹, Jae-Yeol Kim¹, Ju-Hyuk Yim², O-Jong Kwon¹, Seunghyun Ahn¹, Jin-Sang Kim² and Chan Park^{1,3}

¹Department of Materials Science & Engineering, Seoul National University

²Department of Electronic Materials Center, Korea Institute of Science and Technology,

³Research Institute of Advanced Materials, Seoul National University

P98. PbTe valence band structure tuning through doping

Z.M. Gibbs¹, Y. Pei², W. A. Goddard³, G. J. Snyder²

California Institute of Technology, Departments of ¹Chemical Engineering, ²Materials Science, and ³Chemistry

P99. Synthesis and thermoelectric properties of Al_2O_3 -dispersed Bi_2Te_3 matrix nanocomposite powders

Kyung Tae Kim and Gook Hyun Ha
Korea Institute of Materials Science

P100. Thermoelectric properties optimization of thermally co-evaporated p-type $(\text{Bi}_{0.25}\text{Sb}_{0.75})_2\text{Te}_3$ thin films

Niloufar Ghafouri¹, Rebecca L. Peterson¹, Ctirad Uher², and Khalil Najafi¹

¹Department of Electrical Engineering and Computer Science, University of Michigan

²Department of Physics, University of Michigan

P101. Thermoelectric properties of melt-spun Zn_xSb_3 ribbons

Masayuki Hasaka, Takao Morimura, and Hiromiti Nakashima
Graduate School of Engineering, Nagasaki University

P102. Synthesis and formation of highly oriented In_2Te_3 nanostructures in bulk Bi_2Te_3

Nicholas A. Heinz¹, Teruyuki Ikeda^{2,1}, and G. Jeffrey Snyder¹

¹California Institute of Technology

²PRESTO, Japan Science and Technology Agency

P103. Transport properties of $\text{Bi}_{1-x}\text{Sb}_x$ ($x= 0.05$ to 0.30) single crystals

C. F. Desai, M. P. Jani and P. H. Soni

Physics Department, Faculty of Science, The M. S. University of Baroda

P104. Knoop microhardness of $\text{Bi}_{1-x}\text{Sb}_x$ ($x= 0.05$ to 0.30) crystals

Maunik Jani, P. H. Soni and C. F. Desai

Department of Physics, Faculty of Science, The M. S. University of Baroda,

P105. Facial fabrication and thermoelectric properties of Bi_2Te_3 -reduced graphene oxide nanocomposites

Y.Y. Wang, K. F. Cai, X. Yao

Tongji University, Functional Materials Research Laboratory

P106. Thermoelectric properties of the segmented $\text{Bi}_2\text{Te}_3/\text{PbTe}/\text{CoSb}_3$ material prepared by spark plasma sintering

U. Ail¹, S. Gorsse^{1,2}, A. Largeteau¹, P. Bellanger¹, B. Chevalier¹, A. M. Umarji³, and S. Perumal³

¹CNRS, Université de Bordeaux ; ²IPB, ENSCPB ; ³Materials Research Centre, Indian Institute of Science, Bangalore

P107. Optical band gap of $\text{In}_{0.5}\text{Bi}_{1.5}\text{Te}_3$ thin films

P. H. Soni, S. R. Bhavsar¹, M.P. Jani and C. F. Desai

Physics Department, Faculty of Science, The M. S. University of Baroda

P108. $\text{AgPb}_m\text{SbTe}_{22.5}$ ($m=17-23.5$) nanostructured materials with enhanced thermoelectric performance

Zong-Yue Li, Jing-Feng Li

State Key Laboratory of New Ceramics and Fine Processing, Department of Materials Science and Engineering, Tsinghua University

P109. Moved to oral session

P110. Sputtered p-type $\text{Sb}_2\text{Te}_3 / (\text{Bi},\text{Sb})_2\text{Te}_3$ soft superlattices created by nanoalloying

M. Winkler¹, D. Ebling¹, H. Böttner¹, L. Kirste²

¹Fraunhofer-Institute for Physical Measurement Techniques IPM, Thermoelectric Systems

²Fraunhofer-Institute for Applied Solid State Physics IAF

P111. Fabrication process of thermoelectric thick-film using bismuth telluride based nanopowders

Kyung Tae Kim and Gook Hyun Ha

Korea Institute of Materials Science

P112. Direct fabrication process and thermoelectric properties of bismuth telluride based powders using byproducts of Cu refining process

Gook Hyun Ha¹, Kyung Tae Kim¹, Kyong Ju Kim², Gil Geun Lee²

¹Korea Institute of Materials Science; ²Pukyong National University

P113. Heavily doped p type PbSe with high thermoelectric performance: an alternative of PbTe

Heng Wang, Yanzhong Pei, Aaron D. LaLonde and G. Jeffrey Snyder
Department of Materials Science, California Institute of Technology

ICT Sorting Category: B6: novel materials

P114. Thermoelectric Properties of $Ce_{1-x}Sc_xPd_3$

Stephen Boona and Donald Morelli
Department of Chemical Engineering & Materials Science
Michigan State University

P115. Cryogenic thermoelectric properties of the bismuth-lithium system

Christine M. Orovets, Audrey M. Chamoire, Hyungyu Jin, and Joseph P. Heremans
Department of Mechanical and Aeronautical Engineering, The Ohio State University

P116. Preparation and thermoelectric properties of Sn-substituted LAST via the route of MA-PAS and MA-HP

J. Wu, J. Y. Yang, J. S. Zhang, G. Li, S. L. Feng, M. Liu, J. Y. Peng, and Q. Z. Liu
State Key Laboratory of Material Processing and Die & Mould Technology, Huazhong University of Science and Technology

P117. Thermoelectric properties of indium-ion-implanted epitaxial GaAs

M.V. Warren¹, A.W. Wood², J.C. Canniff¹, F. Naab³, C. Uher², and R.S. Goldman^{1,2}
¹Department of Materials Science and Engineering, University of Michigan
²Department of Physics, University of Michigan
³Department of Nuclear Engineering and Radiological Sciences, University of Michigan

P118. Thermoelectric properties of heavily hole doped PbSe

Yeseul Lee¹, John Androulakis¹, Duck-Young Chung², and Mercouri Kanatzidis^{1,2}
¹Department of Chemistry, Northwestern University
²Materials Science Division, Argonne National Laboratory

P119. Te-alloyed In_4Se_3 and its thermoelectric properties

Mahn Jeong^{1,2}, Young Soo Lim¹, Won-Seon Seo¹, and Jong-Heun. Lee²
¹Green Ceramics Division, Korea Institute of Ceramic Engineering and Technology
²Department of Materials Science and Engineering, Korea University

P120. Thermoelectric properties of selenospinel $Cu_{8-x}Fe_4Sn_{12}Se_{32}$

Koichiro Suekuni¹, Masaru Kunii², Hirotaka Nishiate², Michihiro Ohta², Atsushi Yamamoto² and Mikio Koyano¹
¹School of Materials Science, Japan Advanced Institute of Science and Technology
²Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

P121. Thermoelectric properties of indium-selenium compounds prepared by mechanical alloying and sintering

Ju-Hyuk Yim^{1,2}, Hyung-Ho Park², Chan Park³, Myong-Jae Yoo⁴ and Jin-Sang Kim¹

¹Electronic Materials Center, Korea Institute of Science and Technology

²Department of Materials Science and Engineering, Yonsei University

³Department of Materials Science and Engineering, Seoul National University

⁴Electronic Materials and Device Research Center, Korea Electronics Technology Institute

P122. Thermoelectric properties of pure bismuth-based materials with nano-scale precipitates

Yinglu Tang, Nicholas Heinz, and G. Jeffrey Snyder

California Institute of Technology

P123. Synthesis and thermoelectric properties of MgB₄

Masatoshi Takeda and Hiroki Saitoh

Nagaoka University of Technology

P124. Misfit layer sulfides, (Bi_{1-x}AE_xS)_{1.2}(TiS₂)₂, as novel thermoelectric materials

Yulia Eka Putri¹, Chunlei Wan^{1,2}, Yifeng Wang¹, and Kunihito Koumoto^{1,2}

¹Graduate School of Engineering, Nagoya University

²CREST, Japan Science and Technology Agency

P125. Influence of copper on the thermoelectric properties of Ag_{3.6}Mo₉Se₁₁ compound

Tong Zhou¹, Bertrand Lenoir¹, Malika Colin¹, Anne Dauscher¹, Patrick Gougeon², and Michel Potel²

¹Institut Jean Lamour, UMR 7198 CNRS-Nancy Université-UPVM, Ecole Nationale Supérieure des Mines de Nancy,

²Unité Sciences Chimiques de Rennes, Equipe Chimie du Solide et Matériaux UMR6226 CNRS Université de Rennes

P126. Influence of semiconductor layer thickness on microstructure and thermoelectric properties of nitride metal/semiconductor superlattices for high-temperature energy conversion

Polina V. Burmistrova^{1,3}, Jeremy L. Schroeder^{2,3}, Philip Jackson⁴, Timothy D. Sands^{1,2,3}, and Ali Shakouri⁴

¹School of Materials Engineering, Purdue University

²School of Electrical and Computer Engineering, Purdue University

³Birck Nanotechnology Center, Purdue University

⁴Electrical Engineering, University of California-Santa Cruz.

P127. Formation and properties of embedded zincblende and wurtzite nitride nanocrystals

A. W. Wood¹, X. Weng², B. L. Cardozo³, Y. Q. Wang⁴, and R. S. Goldman^{1,3}

¹Department of Physics, University of Michigan

²Materials Research Institute, Penn State University

³Materials Science and Engineering, University of Michigan

⁴Materials Science and Technology Division, Los Alamos National Laboratory

P128. Polyaniline encapsulated graphene nanoplatelets for thermoelectric applications

Jinglei Xiang and Lawrence T. Drzal

Department of Chemical Engineering and Materials Science
Michigan State University

P129. Mobility and thermopower of surface and bulklike charges in Bi and Sb nanowires

T. E. Huber¹, A. Adeyeye¹, A. Nikolaeva^{2,3}, L. Konopko^{2,3}, R.C. Johnson⁴, and M. J. Graf⁴

¹Howard University

²Academy of Sciences, Chisinau, Moldova

³International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland.

⁴Department of Physics, Boston College

P130. Thermoelectric dependence of AZO/InAZO quantum well multilayer structures on band-gap offsets at increasing operating temperatures

Sean Teehan, Harry Efstathiadis, and Pradeep Haldar

College of Nanoscale Science and Engineering, University at Albany

P131. Artificially anisotropic material yielding a transverse thermoelectric effect

Tsutomu Kanno, Akihiro Sakai, Kouhei Takahashi, Atsushi Omote, Hideaki Adachi and Yuka Yamada

Advanced Technology Research Laboratories, Panasonic Corporation, Kyoto, Japan

P132. Large thermal Hall coefficient in bismuth

W. Kobayashi^{1,2}, Y. Koizumi³, and Y. Moritomo¹

¹Univ. Tsukuba; ²JST PRESTO; ³Waseda Univ.

P133. Thermoelectric property of textured polycrystalline Bi₂S₃ prepared by using Bi₂S₃ nanorods and nanotubes

Zhen-Hua Ge¹, Bo-Ping Zhang¹, Zhao-Xin Yu¹, and Jing-Feng Li²

¹Beijing Key Lab of New Energy Materials and Technology, School of Materials Science and Engineering, University of Science and Technology Beijing; ²State Key Laboratory of New Ceramics and Fine Processing, Department of Materials Science and Engineering, Tsinghua University, Beijing

P134. Thermoelectric properties of double-doped GaSb:(Zn, Te)

C.E.Kim¹, K. Kurosaki¹, H. Muta¹, U. Ohishi¹ and S. Yamanaka^{1,2}

¹Osaka University, Japan

P135. Type II narrow gap semiconducting superlattices as thermoelectric elements at cryogenic temperatures

Chuanle Zhou, M. Norko, Matthew Grayson

Northwestern University, Electrical Engineering & Computer Science

P136. Thermoelectric transport in InGaAs with high concentration of rare-earth TbAs embedded nanoparticles

Ekaterina Selezneva¹, Laura Cassels², Ashok Ramu³, Tela Favaloro¹, Je-Hyeong Bahk¹, Mona Zebarjadi¹, Zhixi Bian¹, John Bowers³, Joshua Zide² and Ali Shakouri¹

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ICT Sorting Category: B: Thermoelectric Materials

P137. Bulk nanostructured bismuth telluride (Bi₂Te₃) with improved figure of merit

Mohsin Saleemi¹, Shanghua Li¹, Muhammet S. Toprak¹, Mats Johnsson², Mamoun Muhammed¹

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P138. Heterostructured nanocomposites of PbTe/Bi₂Te₃ for thermoelectrics

Shreyashi Ganguly¹, Kevin Zhou², Jeff Sakamoto², Ctirad Uher³, Stephanie L. Brock¹ and Donald Morelli²

¹Department of Chemistry, Wayne State University

²Chemical Engineering and Materials Science, Michigan State University

³Physics Department, University of Michigan

P139. Effect of uniaxial deformation on the thermoelectric anisotropy and magnetothermoelectric properties of glass coated Bi-Sn wires

A.A. Nikolaeva^{1,2}, L.A. Konopko^{1,2}, A.K. Tsurkan¹, O.V. Botnari¹

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P140. Size quantization semimetal- semiconductor transition in Bi-2at% Sb nanowires: thermoelectrical properties.

A.A. Nikolaeva^{1,2}, L.A. Konopko^{1,2}, T.E. Huber³, P.P. Bodiul¹, I.A. Popov¹, E.F. Moloshnik¹

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²International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland

³Department of Chemistry, Howard University

P141. Growth, electrical and thermal properties of doped mono and polycrystalline SiGe-based quantum dots superlattices

G. Savelli, D. Hauser and J. Simon

CEA Liten, Grenoble, FRANCE

P142. Enhanced electrical conductivities in Si₈₀Ge₂₀B_{0.6} alloys with Er addition prepared by spark plasma sintering

R. Zhao, L. Shen and F. Guo

Beijing Univ. of Tech.

P143. Search for resonant scatterers in bismuth and bismuth-antimony alloys - experiments

Hyungyu Jin¹, Bartłomiej Wiendlocha^{1,3}, Katherine S. Whitehouse¹, and Joseph P. Heremans^{1,2}

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²Department of Physics, Ohio State University

³Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Cracow

P144. Exploring thermoelectric performances of transuranium compounds based on neptunium, plutonium and americium

J.-C. Griveau¹, K. Gofryk², J. Rebizant¹, E. Colineau¹

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P145. Trend for thermoelectric materials and their earth abundance

R. Amatya and R.J. Ram

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P146. Thermoelectric properties of PbSe doped with Indium

Eric Evola, Michele Nielsen, Joseph Heremans

Ohio State University

ICT Sorting Category: C1: microstructure

P147. Effects of reduction potential on the microstructure and transport properties of electrodeposited thermoelectric Bi₂Te₃ nanowires

Ho Sun Shin¹, Seong Gi Jeon², Jin Yu², Jae Yong Song¹, Jinhee Kim¹, Nguyen Thach¹, Ho-Ki Lyeo¹, Dongmin Kang¹ and Hyun Min Park¹

¹Korea Research Institute of Standards and Science

²Korea Advanced Institute of Science and Technology

P148. The preferred orientations and the lattice parameters of Ca₃Co₄O₉ thin films deposited on sapphire substrate

O-Jong Kwon¹, Jangwon Han¹, Hyunwoo Yoo^{1,2}, Hyo-Jung Kim^{1,2}, Kyeongdal Choi³, Jin-Sang Kim², Chan Park¹

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³Korea Polytechnic University

P149. Effect of post-annealing on thermoelectric properties of bismuth-antimony-tellurium thin films deposited by co-sputtering

Seong-jae Jeon^{1,2}, Minsub Oh^{1,2}, Seungmin Hyun¹ and Hoo-jeong Lee²

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²School of Advanced Materials Science and Engineering, Sungkyunkwan University

P150. The study of thermoelectric properties of silicon nanowires

Younghoon Hyun, Moongyu Jang, Youngsam Park, Wonchul Choi¹, Taehyung Zyung, Yil-Suk Yang and Jongkee Kwon

ETRI, Daejeon, Korea, 1KAIST, Daejeon, Korea

P151. Electron backscatter diffraction for rapid characterization of thermoelectric material structure

J. B. Beck¹, M. Alvarado¹, D. Nemir¹, M. M. Nowell², E. Rubio¹

¹TXL Group, Inc

²EDAX Corporation

ICT Sorting Category: C2: properties

P152. Optimization of mechanical and thermoelectric properties for $\text{GeTe}_{0.91}\text{PbTe}_{0.09-x}\text{BiTe}_x$ consolidated by hot-pressed process

Chia-Chan Hsu¹, Hsiu-Ying Chung², Tse-Hsiao Lee¹, Chun-Mu Chen¹, Hsu-Shen Chu¹, Jenn-Dong Hwang¹, Tao-Hsing Chen³

¹Industrial Technology Research Institute, Taiwan

²Department of Materials Science and Engineering, Feng Chia University

³Department of Mechanical Engineering, National Kaohsiung University of Applied Sciences

P153. High temperature equipment for measuring Hall coefficient and charge carrier concentration, mobility and resistivity

Kasper A. Borup, Mogens Christensen, and Bo B. Iversen

Center for Materials Crystallography, Department of Chemistry and iNANO, Aarhus University

P154. Electrical and mechanical properties of CoSb_3 under thermal and cyclic compressive loads

Wen Pengfei^{1,2}, Li Peng^{2,3}, Zhang Qingjie², Ruan Zhongwei¹, Liu Lisheng^{1,2}, and Zhai Pengcheng^{1,2}

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P155. Physical properties of materials based on $\text{Tl}_{10}\text{Te}_6$: La and Sn doping for thermoelectric purposes

B. A. Kuropatwa, S. Bangarigadu-Sanasy, H. Kleinke

University of Waterloo

P156. Single Bi_2Te_3 nanowire assembly onto a pre-fabricated platform by using dielectrophoresis and thermoelectric properties measurement

Z. Wang, M. Kroener and P. Woias

Institute for Microsystems Technology-IMTEK, University of Freiburg

P157. Methods and equipment for quality control of thermoelectric materials

L. I. Anatyshuk, M. V. Havrylyuk and V. V. Lysko
Institute of Thermoelectricity, Chernivtsi, Ukraine

P158. Extraction and implementation of non-ideal parameters of thermoelectric generation systems in SPICE modeling

M. Chen¹, J. Gao^{2,3}, Z. Kang⁴, J. Zhang⁴, and Q. Du²

¹Institute of Energy Technology, Aalborg University,

²School of Mechanical and Auto Engineering, South China University of Technology

³Hebei University of Science and Technology

⁴R&D Center, Fuxin Electronic Technology Co., Ltd.

P159. Thermoelectric transport in nanostructured bulk materials from sulfur-doped pnictogen chalcogenide nanoplate crystals

Yanliang Zhang¹, Rutvik J. Mehta², Matthew Belley¹, Liang Han¹, Theodorian Borca-Tasciuc¹ and Ganpati Ramanath²

¹Department of Mechanical, Aerospace and Nuclear Engineering, Rensselaer Polytechnic Institute

²Department of Materials Science and Engineering, Rensselaer Polytechnic Institute

P160. Thermomagnetic figure of merit in semimetals: the case of graphite

Zengwei Zhu, Benoît Fauqué and Kamran Behnia
Laboratoire Photons et Matière (CNRS-UPMC), ESPCI, Paris, France

P161. Advanced research in thermoelectrics

Claus Linseis
Linseis GMBH

P162. Thermal characterization of bismuth tellurides

J. Blumm, A. Schindler, A. Lindemann
NETZSCH-Geraetebau GmbH

P163. Magnetic, optical and structural properties of Fe doped Bi₂Te₃ single crystal

Bhakti Jariwala¹, Dimple Shah¹, Sandip Vyas²

¹Department of Applied Physics, S.V. National Institute of Technology

²School of Science, Gujarat University, Ahmedabad.

ICT Sorting Category: C: Measurement & Characterization

P164. Investigation of the sintering pressure and thermal conductivity anisotropy of melt-spun spark-plasma-sintered (Bi,Sb)₂Te₃ thermoelectric materials

Wenjie Xie^{1,2}, Jian He², Song Zhu², Tim Holgate², Shanyu Wang¹, Xinfeng Tang¹, Qingjie Zhang¹, and Terry M. Tritt²

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²Department of Physics & Astronomy, Clemson University, Clemson, SC 29634-0978, USA

P165. Semiconductor measuring thermoelectric converters of improved accuracy

L. I. Anatyshuk, V. I. Bodnaruk and D. D. Taschuk
Institute of Thermoelectricity, Chernivtsi, Ukraine

ICT Sorting Category: D1: design and fabrication

P166. Simulation of a silicide-based thermoelectric generator for power generation

A.J. Zhou¹, J.Z. Li¹, X.B. Zhao², T.J. Zhu², G. Karpinski³, and E. Mueller³

¹State Key Laboratory of Electronic Thin films and Integrated Devices, University of Electronic Science and Technology of China

²State Key Laboratory of Silicon Materials, Zhejiang University

³Institute of Materials Research, German Aerospace Center (DLR)

P167. Optimal design of a segmented thermoelectric generator

Cai Lanlan¹, Li Peng¹, Zhai Pengcheng², Tang Xinfeng¹, Zhang Qingjie¹ and M. Niino³

¹State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology

²Department of Engineering Structure and Mechanics, Wuhan University of Technology ³Japan Aerospace Exploration Agency

P168. Examination of a thermally suitable construction for a non-conventional uni-leg Mg₂Si thermoelectric power generator

T. Sakamoto¹, T. Iida¹, Y. Taguchi², S. Kurosaki¹, Y. Hayatsu¹, S. Sakuragi¹, K. Nishio¹, Y. Kogo¹, and Y. Takanashi¹

¹Department of Materials Science and Technology, Tokyo University of Science

²Union Material Inc.

P169. A resistance ratio analysis for CoSb₃-based thermoelectric unicouples

Son-Mok Choi¹, Kyoung-Hoon Kim¹, Seong-Min Jeong¹, Hyung-Seuk Choi¹, Won-Seon Seo¹, Il-Ho Kim²

¹Green Ceramic Div., Korea Institute of Ceramic Engineering and Technology (KICET)

²Department of Material Science and Engineering, Chungju National University

P170. Design and optimization of gradient interface of CoSb₃/Bi₂Te₃ thermoelectric materials

Gang Liu, Wenyu Zhao, Hongyu Zhou, Xin Cheng and Qingjie Zhang

State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology

P171. Effect of surface preparation on mechanical properties of Ni contacts on polycrystalline (Bi_{1-x}Sb_x)₂(Te_{1-y}Se_y)₃ alloys

S. Kashi, M.K. Keshavarz, D. Vasilevskiy, R.A. Masut, S. Turenne

École Polytechnique de Montréal

P172. Design and fabrication of the flexible thermoelectric device using FPCB

Jung Yup Kim, Kwang Eun Lee and Seungwoo Han
Korea Institute of Machinery and Materials

P173. Comparison of thermoelectric multiphysics model and device

Mikko Ruoho¹, Tuomas Rossi¹, Ilkka Tittonen¹, Erno Soinila², Mika Jokipii³ and Jyrki Tervo³
¹Department of Micro and Nanosciences, Aalto University
²Department of Engineering Design and Production, Aalto University
³VTT Technical Research Centre of Finland

P174. A study of thermoelectric properties of Bi₂Te₃ alloys with Ta barrier layer

Yi-Ray Chen¹, Wen-Hsuan Chao², Chien-Hsuan Yeh¹, Hsiao-Hsuan Hsu¹, Ya-Wen Chou¹
¹Green Energy & Environment Research Laboratories, Industrial Technology Research Institute, Taiwan
²Material & Chemical Research Laboratories, Industrial Technology Research Institute, Taiwan

P175. Numerical analysis performance of thermoelectric module composed of Bi₂Te₃ (Sb,Te) alloys by directional solidification

Ping-Jen Lee^{1,2}, Long-Sun Chao¹, Jheng-Han Yang¹, Yi-Ray Chen³ and Ya-Wen Chou³
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²Nano Technology Research Center, ITRI, Taiwan
³Green Energy and Environment Research Laboratories, ITRI, Taiwan

P176. Effect of encapsulation of thermoelectric power generator

A. Yamamoto, K. Nagase, H. Takazawa, Hirotaka Nishiate, K. Ueno
National Institute of Advanced Industrial Science and Technology

P177. Silicon nanowires based thermoelectric generator from a top-down approach

Y. Li^{1,2,3}, K. Buddharaju¹, N. Sing¹, G. Q. Lo¹, and S. J. Lee³
¹Institute of Microelectronics, A*STAR (Agency for Science, Technology and Research), ²NUS Graduate School for Integrative Science and Engineering
³ECE Department, National University of Singapore

ICT Sorting Category: D2: thin film devices

P178. Thermoelectric characteristics of thermopile devices consisting of bismuth-telluride and antimony-telluride thin-film legs

M. Y. Kim, Y. N. Choi, J. M. Bae and T. S. Oh
Department of Materials Science and Engineering, Hongik University, Seoul, Korea

P179. Effect of dopant concentration on thermoelectric and hydrogen sensing properties of silicon-germanium thin films

Jing-Wen Ho, Li-Shin Chang
Dept. of Mater. Sci. & Eng., Natl. Chung Hsing Univ

ICT Sorting Category: D3: device performance

P180. Energy capabilities of permeable segmented thermoelements in cooling mode

L. I. Anatyshuk and R.G. Cherkez
Institute of Thermoelectricity, Chernivtsi, Ukraine

P181. Transverse-type short-circuited thermoelements

L.I. Anatyshuk and R.R. Kobylansky
Institute of Thermoelectricity, Chernivtsi, Ukraine

P182. Transverse-type spiral anisotropic thermoelement

L. I. Anatyshuk and A. V. Prybyla
Institute of Thermoelectricity, Chernivtsi, Ukraine

P183. Validation of the thermoelectric properties of advanced high temperature materials using a segmented couple performance test

Billy C. Li¹, Pawan Gogna¹, Chen-Kuo Huang¹, Kurt Star², Samad Firdosy¹, Jeff Sakamoto³, Vilupanur A. Ravi^{1,4}, and Jean-Pierre Fleurial¹

¹Jet Propulsion Laboratory, California Institute of Technology

²University of California, Los Angeles

³Michigan State University

⁴California State Polytechnic University, Pomona

P184. Thermal optimization of thermoelectric module ceramic substrate

A. Rezanian, L. A. Rosendahl
Department of Energy Technology, Aalborg University

P185. Design of a portable test system for measuring thermoelectric generator module parameters

Amir Yadollah Faraji and Aliakbar Akbarzadeh
Energy Conservation and Renewable Energy Group, School of Aerospace, Mechanical. and Manufacturing Engineering, RMIT University

P186. Thermoelectric generation for different material sets having the same Z

David Nemir, Jan Beck and Manuel Alvarado
TXL Group, Inc.

P187. Improving the testing of power generation modules and resulting performance projections

Michael Spry
Tellurex Corporation

ICT Sorting Category: E1: cooling applications

P188. Thermoelectric self refrigeration: experimental and computational approach

A. Martínez, D. Astrain, A. Rodríguez
Mechanical, Energy and Materials Engineering Department
Public University of Navarre, 31006 Pamplona, Spain

P189. Computational study on the thermal influence of the components of a thermoelectric ice maker on the ice production

A. Rodríguez, D. Astrain, A. Martínez, and J.G.Vián
Mechanical, Energy and Materials Engineering Department
Public University of Navarre, 31006 Pamplona, Spain

P190. Computational study on the temperature control system of a thermoelectric refrigerator

D. Astrain, A. Martínez, J. Gorraiz, and A. Rodríguez
Mechanical, Energy and Materials Engineering Department
Public University of Navarre, 31006 Pamplona, Spain

P191. The development of high efficiency thermoelectric water heap pump

Ming-Lang Hung, Jyi-Ching Perng, and Ya-Wen Chou
Green Energy & Environment Research Laboratories, Industrial Technology Research Institute,
Taiwan

ICT Sorting Category E1: cooling applications

P192. Modeling of thermoelectric system for simultaneous cooling and heating

M.G. How¹, S.I. Gilani², M.S. Aris¹ and K.S. Ong²
¹Universiti Teknologi PETRONAS; ²Monash University Malaysia

P193. Improvement of cooling performance of a compact thermoelectric air conditioner using an evaporative cooling system

C. Lertsatitthanakorn, W. Tipsaenporm and B. Bubphachot
Faculty of Engineering, Mahasarakham University, Khantawichai, Mahasarakham, Thailand

P194. The cooling system of 3-Dimensional integrated circuits using thin film thermoelectric cooler

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²School of Integrated Technology and Yonsei Institute of Convergence Technology (YICT), Yonsei University

ICT Sorting Category: E2: automotive applications

P195. Potential usage of thermoelectric devices in a HTPEMFC system: two case studies

Xin Gao, Min Chen, Søren Juhl Andreasen, and Søren Knudsen Kær

Aalborg University

P196. Heat exchanger model for recovering waste from diesel engine exhaust for thermoelectric power generation

C. Baker and P. Vuppuluri

University of Texas at Austin

P197. Withdrawn

ICT Sorting Category: E3: generator applications

P198. A flameless combustion-based thermoelectric power generation system

Heng Xiao¹, Kuanrong Qiu²

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P199. Solar thermoelectric generator trials for the developing world

R. Amaty and R.J. Ram

Research Laboratory of Electronics, Massachusetts Institute of Technology

P200. Integration of a thermoelectric generator assembly with fuel-fired residential boiler

K. Qiu¹, H. Xiao^{1,2}, and A.C.S. Hayden¹

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²School of Power Engineering, Chongqing University, Chongqing 400044, China

P201. Thermoelectric materials for efficient solar high temperature converters

Anke Weidenkaff, A. Veziridis, L. Karvonen, S. Populoh, A. Shkabko, N. Schaeuble

Empa, Swiss Federal Laboratories for Materials Science and Technology

P202. High-performance solar thermoelectric power conversion: modeling, optimization, and experimental demonstration

Daniel Kraemer¹, Kenneth McEnaney¹, Bed Poudel², J. Christopher Caylor², Hsien-Ping Feng¹, Yi Ma³, Bo Yu³, Xiao Yan³, Giri Joshi³, Xiaowei Wang³, Dezhi Wang³, Andrew Muto¹, Matteo Chiesa^{1,4}, Zhifeng Ren³, and Gang Chen¹

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²GMZ Energy

³Department of Physics, Boston College

⁴Masdar Institute of Science and Technology, Abu Dhabi, UAE

P203. Development of 200w MPPT power conditioner with inter leave power switching control

Hiroshi. Nagayoshi¹, Tatsuya Nakabayashi², Hiroshi Maiwa², and Takenobu Kajikawa²

¹Tokyo National College of Technology

²Shonan Institute of Technology

P204. Hybrid producer gas by using by biomass – thermoelectric

C. Punlek¹, S. Maneewan¹, S. Chindaruksa¹ and C. Lertsatitthanakorn²

¹Thermal Energy and Energy Conservation Promotion Research Unit, Physics Department, Faculty of Science, Naresuan University, Phitsanulok, 65000 Thailand

²Faculty of Engineering, Maharakham University, Khantarakwichai, Maharakham 44150, Thailand

P205. Experimental study on solar parabolic dish thermoelectric power generator

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²Department of Mechanical Engineering, Adhiyamaan College of Engineering, Hosur, India

P206. Performance prediction of the waste heat recovery system by thermoelectric power generator

Gia-Yeh Huang¹, Cheng-Ting Hsu², Chun-Jen Fang³ and Da-Jeng Yao^{1,2}

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²Institute of NanoEngineering and MicroSystems, National Tsing Hua University

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P207. A maximum power point tracking controller for thermoelectric generators with peak gain control of boost DC-DC converters

Jungyong Park¹, Nyambayar Baatar¹ and Shiho Kim²

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Cheongju, Chungcheongbuk-do, 361-763, Korea

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Yonsei University, Songdo, Inchen, 406-840, Korea

P208. Scalable Cost/Performance Analysis for Thermoelectric Waste Heat Recovery Systems

K. Yazawa and A. Shakouri

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P209. Integrating aerogel into space and terrestrial thermoelectric generator technology

Travis Thompson, Ryan Maloney, and Jeff Sakamoto

Chemical Engineering and Materials Science Department, Michigan State University

P210. Pulse mode operation of thermoelectric generators

Gao Min

School of Engineering, Cardiff University

ICT Sorting Category E4: Other Waste Heat Recovery

P211. Waste-heat recovery from phosphors

A. Vogelsang¹, S. Ben Salem², G. Bastian¹

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P212. On the prospects of using thermoelectric recuperators in heat engines

L. I. Anatyshuk

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ICT Sorting Category: E5: other industrial aspects

P213. Thermoelectric properties dependence on the performance of Peltier current leads under over-current conditions

Toshio Kawahara¹, Masahiko Emoto², Makoto Hamabe¹, Hirofumi Watanabe¹,

Yury Ivanov¹, Jian Sun¹, and Satarou Yamaguchi¹

¹Center of Applied Superconductivity and Sustainable Energy Research, Chubu University, Aichi 487-8501 Japan,

²National Institute for Fusion Science, Gifu 509-5292 Japan.

P214. Thermoelectric generation systems and their power electronics stage

J. Gao^{1,2}, L. Ni³, K. Sun⁴, M. Chen⁵, Z. Kang⁶, L. Zhang³, Y. Xing³, and J. Zhang⁶

¹School of Mechanical and Auto Engineering, South China University of Technology, ²Hebei University of Science and Technology

³Jiangsu Key Lab of New Energy Generation, Nanjing University of Aeronautics & Astronautics

⁴State Key Lab of Power Systems, Dept. of Electrical Engineering, Tsinghua University

⁵Institute of Energy Technology, Aalborg University

⁶R&D Center, Fuxin Electronic Technology Co., Ltd

ICT Sorting Category: E: System & Industrial Applications

P215. Study on the design and initial experiments of thermoelectric generator using exhaust heat of car

S.H Quan, Y.D Deng, and R.Quan

School of Automobile Engineering, Wuhan University of Technology

P216. Design and Application of Thermoelectric Generators on the Waste Heat Recovery from Heating Furnace

C.J. Fang¹ and J.D. Hwang²

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²Industry Technology Research Institute, Hsinchu, Taiwan, R.O.C.

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