UMUT AYDEMIR
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SCIENTIFIC MOTIVATION

My primary motivation in science is to conduct groundbreaking interdisciplinary research by combining basic and applied concepts of chemistry, physics, and materials science.

ACADEMIC QUALIFICATIONS

10/2019 – Present	**Director**, Koç University Boron and Advanced Materials Application and Research Center (KUBAM), Turkey
08/2017 – Present	**Assistant Professor**, Department of Chemistry, Koç University, Istanbul, Turkey.
08/2015 – 08/2017	**Research Associate**, Department of Materials Science and Engineering, Northwestern University. Research Title: Synthesis and Characterization of Novel Thermoelectric Materials.
05/2016 – 10/2016	**Research Advisor**, Department of Chemistry, Koç University. Research Title: Investigation of thermal and hydrothermal stability of synthesized oxides of aluminum, silicon, and titanium.
11/2013 – 08/2015	**Postdoctoral Scholar**, Department of Applied Physics & Materials Science, California Institute of Technology. Research Title: Synthesis of Sb-based Zintl Phases as Thermoelectrics.
2013 – 2014	**Research Advisor**, Department of Chemistry, Koç University. Research Title: Synthesis and Characterization of Refractory Materials in the Systems Re-B and Ti-B.
2012 – 2013	**Postdoctoral Researcher**, Department of Chemistry, Koç University. Research Title: Synthesis and Characterization of Refractory Materials in the Systems Re-B and Ti-B.
2006 – 2012	**Dr. rer. nat. (Doctor of Science) in Chemistry (Magna Cum Laude, With Great Honor)**, Max Planck Institute for Chemical Physics of Solids (MPI-CPfS) – Dresden University of Technology, Dresden, Germany. Thesis Advisor: Prof. Yuri Grin Thesis Title: Preparation and Characterization of Clathrates in the Systems Ba–Ge, Ba–Ni–Ge, and Ba–Ni–Si.
2004 – 2006	**M.Sc. in Materials Science and Engineering**, Koç University, Istanbul, Turkey. Thesis Advisor: Prof. Mehmet Somer Thesis Title: Clathrate I Compounds of Barium with Transition Metal, Silicon and Germanium Framework and Contributions to TaNiSi.
1998 – 2004	**B.Sc. in Chemistry and Physics (Double Major)**, Koç University, Istanbul, Turkey.

FELLOWSHIPS AND AWARDS

2019	Recipient of the 2019 The Turkish Academy of Sciences (TUBA) - Outstanding Young Scientist Award (GEBIP) in Chemistry, Ankara, Turkey.
2018	Recipient of the 2018 Science Academy's Young Scientist Award (BAGEP) in Chemistry, Istanbul, Turkey.
2016	Best Poster Award, the 35th International Conference & the 1st Asian Conference on Thermoelectrics, Wuhan, China.
2015	Best Poster Award, the 34th Annual International Conference on Thermoelectrics & 13th European Conference on Thermoelectrics, Dresden, Germany.
2013	Recipient of the Scientific and Technological Research Council of Turkey (TUBITAK) Postdoctoral Grant.
2006	Top-ranking student among the Materials Science and Engineering graduates at Koç University.
2004	Top-ranking student among the Chemistry graduates at Koç University.
1998	Vehbi Koç Scholarship for B.Sc. studies at Koç University.

TEACHING EXPERIENCE

2020 - Spring	Instructor of *General Chemistry* (Chem 102), Koç University.
2019 - Fall	Instructor of *General Chemistry* (Chem 101) and Materials Science and Engineering I (MASE 515), Koç University.
2019 - Spring	Instructor of *General Chemistry* (Chem 102 &103), Koç University.
2018 - Spring & Fall	Instructor of *General Chemistry* (Chem 103), Koç University.
2017 - Fall	Instructor of *General Chemistry* (Chem 103), Koç University.

PUBLICATION SUMMARY

Number of citations: 2074 (1682), **h-index:** 27 (24) **Source:** Google Scholar (Web of Science)

Author of 74 peer-reviewed articles published in top scientific journals such as *Nature Reviews Materials (**IF**: 51.941), Energy & Environmental Science (**IF**: 30.067), Advanced Materials (**IF**: 21.950), Advanced Energy Materials (**IF**: 21.875), Journal of the American Chemical Society (**IF**: 14.357), Advanced Functional Materials (**IF**: 13.325), Advanced Science (**IF**: 12.441), Chemistry of Materials (**IF**: 9.890), Journal of Materials Chemistry A (**IF**: 9.931), Physical Review Letters (**IF**: 8.839), etc.*

A guest editor of "Themed issue on the chemistry of thermoelectric materials" published in the *Journal of Materials Chemistry C.*

The journals reviewed include: *Advanced Energy Materials, Advanced Functional Materials, Nano Energy, Chemistry of Materials, ACS Applied Materials & Interfaces, Physical Chemistry Chemical Physics, Materials Physics Today, Inorganic Chemistry, Scientific Reports, RCS Advances, Dalton Transactions, APL Materials, etc.*

Director of one symposium, scientific committee member of two conferences, one colloquium and ten invited talks, 50 oral and poster presentations in national/international conferences and universities.

BOOK CHAPTERS

1. A. Zevalkink, U. Aydemir, G. J. Snyder, "Chain-Forming A_3MPn_3 and $A_5M_2Pn_6$ Zintl Phases", Chapter in Materials Aspect of Thermoelectricity, by CRC Press, Taylor & Francis Group, Editor: Ctirad Uher

PUBLICATIONS

Peer-Reviewed Journal Articles

74. Vibrational dynamics of the type-I clathrates $A_8Sn_{44}\square_2$ (A = Cs, Rb, K) from lattice-dynamics calculations, inelastic neutron scattering, and specific heat measurements.
C. Candolfi*, M. M. Koza, U. Aydemir, W. Carrillo-Cabrera, Yu. Grin, F. Steglich, and M. Baitinger, *J. Appl. Phys.*, 2020, 127, 145104.

73. Intrinsic mechanical behavior of MgAgSb thermoelectric material: An ab initio study
G. Li*, Q. An, U. Aydemir, S. I. Morozov, B. Duan, P. Zhai*, Q. Zhang, and W. A. Goddard III, *J. Materiomics*, 2020, 6, 24.

72. TiB_2–SiC-based ceramics as alternative efficient micro heat exchangers
S. Nekahi, M. Vajdi, F. S. Moghanlou, K. Vaferi, A. Motallebzadeh, M. Ozen, U. Aydemir, J. Sha, M. S. Asl*, *Ceram. Int*, 2019, 45, 19060.

71. Ultrahigh figure-of-merit of Cu_2Se incorporated with carbon coated boron nanoparticles
M. Li, S. Md K. N. Islam, M. Yahyaoglu, D. Pan, X. Shi, L. Chen, U. Aydemir, X. Wang*, *InfoMat*, 2019, 1, 108.

70. Origins of Ultralow Thermal Conductivity in 1-2-1-4 Quaternary Selenides
J. J. Kuo, U. Aydemir, J.-H. Pohls, F. Zhou, G. Yu, A. Faghaninia, F. Ricci, M. A. White, G.-M. Rignanese, G. Hautier, A. Jain, G. J. Snyder*, *J. Mater. Chem. A*, 2019, 7, 2589.

69. First-principles calculations and experimental studies of XYZ 2 thermoelectric compounds: detailed analysis of van der Waals interactions
J.-H. Pöhls, Z. Luo, U. Aydemir, J.-P. Sun, S. Hao, J. He, I. G Hill, G. Hautier, A. Jain, X. Zeng, C. Wolverton, G. J. Snyder, H. Zhu, M. A. White*, *J. Mater. Chem. A*, 2018, 6, 19502.

68. Giant enhancement of the figure-of-merit over a broad temperature range in nano-boron incorporated Cu_2Se
S. Md. K. N. Islam, M. Li, U. Aydemir, X. Shi, L. Chen, G. J. Snyder, and X. Wang*, *J. Mater. Chem. A*, 2018, 6, 18409.

67. Melt-centrifuged $(Bi,Sb)_2Te_3$: engineering microstructure towards high thermoelectric efficiency
Y. Pan, U. Aydemir*, J. A. Grovogui, I. T. Witting, R. Hanus, Y. Xu, J. Wu, C.-F. Wu, F.-H. Sun, H.-L. Zhuang, J.-F. Dong, J.-F. Li*, V. P. Dravid, and G. J. Snyder*, *Adv. Mater.*, 2018, 30, 1802016.

66. Observation of Valence Band Crossing: The Thermoelectric Properties of $CaZn_2Sb_2$-$CaMg_2Sb_2$ solid Solution
M. Wood, U. Aydemir*, S. Ohno, and G. J. Snyder*, *J. Mater. Chem. A*, 2018, 6, 9437.

65. A Valence Balanced Rule for Discovery of 18-electron Half-Heuslers with Defects
S. Anand, K. Xia, V. I. Hegde, U. Aydemir, V. Kocevski, T. Zhu, C. Wolverton, G. J. Snyder*, *Energy*

Environ. Sci., 2018, 11, 1480.

64. Localized Symmetry Breaking for Tuning Thermal Expansion in ScF3 Nano-scale Frameworks
L. Hu, F. Qin, A. Sanson, L.-F. Huang, Z. Pan, Q. Li, Q. Sun, L. Wang, F. Guo, U. Aydemir, Y. Ren, C. Sun, J. Deng, G. Aquilanti, J. M. Rondinelli, J. Chen*, and X. Xing, *J. Am. Chem. Soc.*, 2018, 140, 4477.

63. Mechanical properties in thermoelectric oxides: ideal strength, deformation mechanism, and fracture toughness
G. Li*, U. Aydemir, S. Morozov, S. A. Miller, Q. An, W. A. Goddard III, P. Zhai, Q. Zhang **, G. J. Snyder, *Acta Mater.*, 2018, 149, 341.

62. Quaternary Pavonites $A_{1+x}Sn_{2-x}Bi_{5+x}S_{10}$ ($A^+ = Li^+$, Na^+): Site Occupancy Disorder Defines Electronic Structure
J. F. Khoury, S. Hao, C. C. Stoumpos, Z. Yao, C. D. Malliakas, U. Aydemir, T. J. Slade, G. J. Snyder, C. Wolverton, and M. G. Kanatzidis*, *Inorg. Chem*, 2018, 57, 2260.

61. Polycrystalline $ZrTe_5$ parametrized as a narrow-band-gap semiconductor for thermoelectric performance.
S. A. Miller, I. Witting, G. J. Snyder, U. Aydemir, L. Peng, A. J. E. Rettie, D. Y. Chung, P. Gorai, V. Stevanović, M. G. Kanatzidis, M. Grayson, and E. S. Toberer, *Phys. Rev. Applied*, 2018, 9, 014025.

60. Unique role of refractory Ta alloying in enhancing the figure of merit of NbFeSb thermoelectric materials.
J. Yu, C. Fu, Y. Liu, K. Xia, U. Aydemir, T. C. Chasapis, G. J. Snyder, X. Zhao*, T. Zhu*, *Adv. Energy Mater.*, 2018, 8, 1701313.

59. Metal phosphides as potential thermoelectric materials.
J-H. Pöhls, A. Faghaninia, G. Petretto, U. Aydemir, F. Ricci, G. Li, M. Wood, S. Ohno, G. Hautier, G. J. Snyder, G.-M. Rignanese, A. Jain and M. Anne White*, *J. Mater. Chem. C*, 2017, 5, 12441.

58. Micro- and Macromechanical Properties of Thermoelectric Lead Chalcogenides.
G. Li, U. Aydemir, B. Duan, M. T. Agne, H. Wang, M. Wood, Q. Zhang, P. Zhai, W. A. Goddard III, G. J. Snyder*, *ACS Appl. Mater. Interfaces*, 2017, 9, 40488.

57. Isotropic zero thermal expansion and local thermal vibration dynamics in $(Sc,Fe)F_3$.
F. Qin, J. Chen,* U. Aydemir, A. Sanson, J. Xu, C. Sun, Y. Ren, Z. Pan, J. Deng, R. Yu, L. Hu, G. J. Snyder, X. Xing, *Inorg. Chem.*, 2017, 56, 10840.

56. Superstrengthening Bi_2Te_3 through nanotwinning.
G. Li, U. Aydemir, S. I. Morozov, M. Wood, Q. An, P. Zhai, Q. Zhang, W. A. Goddard III, G. J. Snyder*, *Phys. Rev. Lett.*, 2017, 119, 085501.

55. Grain boundary engineering with nano-scale InSb producing high performance $In_xCe_yCo_4Sb_{12-z}$ skutterudite thermoelectrics.
H. Li, X. Su, X. Tang*, Q. Zhang, C. Uher, G. J. Snyder, U. Aydemir*, *J. Materiomics*, 2017, **3**, 273.

54. Self-Tuning n-Type $Bi_2(Te,Se)_3$/SiC Thermoelectric Nanocomposites to Realize High Performances up to 300 °C.
Y. Pan, U. Aydemir, F.-H. Sun, C.-F. Wu, T. C. Chasapis, G. J. Snyder*, J.-F. Li*, *Adv. Sci.*, 2017, 1700259.

53. SnO as a Potential Oxide Thermoelectric Candidate.
S. Miller, P. Gorai, U. Aydemir, T. O. Mason, V. Stevanovic, E. Toberer, G. Jeffrey Snyder*, *J. Mater. Chem. C*, 2017, 5, 8854.

52. Mechanical properties of thermoelectric lanthanum telluride from quantum mechanics.
G. Li, U. Aydemir, M. Wood, W. A. Goddard, P. Zhai, Q. Zhang, G. J. Snyder*, *J. Phys. D: Appl. Phys.*, 2017, 50, 274002.

51. Data Descriptor: An electronic transport ab initio database for inorganic materials.
F. Ricci, W. Chen, U. Aydemir, G. J. Snyder, G.-M. Rignanese, A. Jain, G. Hautier*, *Sci. Data*, 2017, 4, 170085.

50. Enhanced Stability and Thermoelectric Figure-of-Merit in Copper Selenide by Lithium Doping.
S. D. Kang, J.-H. Pöhls, U. Aydemir, P. Qiu, C. C. Stoumpos, R. Hanus, M. A. White, X. Shi, L. Chen, M. G. Kanatzidis, G. Jeffrey Snyder*, *Mater. Today Phys.*, 2017, 1, 7.

49. Defect-Controlled Electronic Structure and Phase Stability in Thermoelectric Skutterudite $CoSb_3$
G. Li, U. Aydemir, M. Wood, W. A. Goddard, P. Zhai, Q. Zhang*, G. J. Snyder*, *Chem. Mater.*, 2017, 29, 3999.

48. Deformation Mechanisms in the High-Efficiency Thermoelectric Layered Zintl Compounds.
G. Li, U. Aydemir, M. Wood, Q. An, W. A. Goddard, P. Zhai, Q. Zhang*, G. J. Snyder*, *J. Mater. Chem. A*, 2017, 5, 9050.

47. Ideal Strength and Deformation Mechanism in High-Efficiency Thermoelectric SnSe.
G. Li, U. Aydemir, M. Wood, W. A. Goddard, P. Zhai, Q. Zhang*, G. J. Snyder*, *Chem. Mater.*, 2017, 29, 2382–2389.

46. A computational assessment of the electronic, thermoelectric, and defect properties of bournonite ($CuPbSbS_3$) and related substitutions.
A. Faghaninia*, G. Yu, U. Aydemir, M. Wood, W. Chen, G.-M. Rignanese, G. J. Snyder, G. Hautier, and A. Jain*, *Phys. Chem. Chem. Phys.*, 2017, 19, 6743-6756.

45. Achieving $zT > 1$ in inexpensive Zintl phase $Ca_9Zn_{4+x}Sb_9$ by phase boundary mapping.
S. Ohno, U. Aydemir, M. Amsler, J.-H. Pöhls, S. Chanakian, A. Zevalkink, M. A. White, S. K. Bux, C. Wolverton, and G. J. Snyder*, *Adv. Funct. Mater.*, 2017, 27, 1606361.

44. High Temperature Electronic and Thermal Transport Properties of $EuGa_{2-x}In_xSb_2$.
S. Chanakian, R. Weber, U. Aydemir*, A. Ormeci, J.-P. Fleurial, S. Bux, and G. J. Snyder, *J. Electron. Mater.*, 2017, 46, 4798.

43. Structure and failure mechanism of the thermoelectric $CoSb_3$/TiCoSb interface.
G. Li, S. Hao, U. Aydemir, M. Wood, W. A. Goddard, P. Zhai, Q. Zhang*, G. J. Snyder*, *ACS Appl. Mater. Interfaces*, 2016, 8, 31968-31977.

42. Enhanced ideal strength of thermoelectric half-Heusler TiNiSn by sub-structure engineering.
G. Li, Q. An, U. Aydemir, W. A. Goddard, M. Wood, P. Zhai, Q. Zhang*, G. J. Snyder*, *J. Mater. Chem. A*, 2016, 4, 14625-14636.

41. Engineering Half-Heusler Thermoelectric Materials Using Zintl Chemistry.
W. G. Zeier, J. Schmitt, G. Hautier, U. Aydemir, Z. M. Gibbs, C. Felser, and G. J. Snyder*
Nature Reviews Materials, 2016, 1, 16032.

40. Understanding Thermoelectric Properties from High-Throughput Calculations: Trends, Insights, and Comparisons with Experiment.
W. Chen, J.-H. Pöhls, G. Hautier, D. Broberg, S. Bajaj, U. Aydemir, Z. M. Gibbs, H. Zhu, M. Asta, G. J. Snyder, B. Meredig, M. A. White, K. Persson, and A. Jain*, *J. Mater. Chem. C*, 2016, 4, 4414.

39. A novel europium (III) nitridoborate $Eu_3[B_3N_6]$: Synthesis, crystal Structure, magnetic properties, and Raman spectra.
U. Aydemir*, I. Kokal, Yu. Prots, T. Förster, J. Sichelschmidt, F. Schappacher, R. Pöttgen, A. Ormeci, M. Somer*, *J. Solid State Chem.*, 2016, 239, 75.

38. p-type Co interstitial defects in thermoelectric skutterudite $CoSb_3$ due to the breakage of Sb_4-rings.
G. Li, S. Bajaj, U. Aydemir, S. Hao, H. Xiao, W. A. Goddard, P. Zhai, Q. Zhang, G. J. Snyder*, *Chem. Mater.*, 2016, 28, 2172.

37. $YCuTe_2$: a member of a new class of thermoelectric materials with $CuTe_4$-based layered structure.
U. Aydemir*, J.-H. Pöhls, H. Zhu, G. Hautier, S. Bajaj, Z. M. Gibbs, W. Chen, G. Li, S. Ohno, D. Broberg, S. D. Kang, M. Asta, G. Ceder, M. A. White, K. Persson, A. Jain, and G. J. Snyder*, *J. Mater. Chem. A*, 2016, 4, 2461. **(10)**

36. Enhanced thermoelectric properties of the Zintl phase $BaGa_2Sb_2$ via doping with Na or K
U. Aydemir*, A. Zevalkink, A. Ormeci, S. Bux, and G. J. Snyder, *J. Mater. Chem. A*, 2016, 4, 1867.

35. Apparent critical phenomena in the superionic phase transition of $Cu_{2-x}Se$.
S. D. Kang, S. A. Danilkin, U. Aydemir, M. Avdeev, A. Studer, and G. J. Snyder*, *New J. Phys.*, 2016, 18, 013025.

34. Electronic band structure and low-temperature transport properties of the type-I clathrate $Ba_8Ni_x\square_yGe_{46-x-y}$.
U. Aydemir, C. Candolfi, A. Ormeci, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin*, *Dalton Trans.*, 2015, 44, 7524-7537.

33. Thermoelectric Properties of the Zintl Phases $Yb_5M_2Sb_6$ (M = Al, Ga, In).
U. Aydemir*, A. Zevalkink, A. Ormeci, H. Wang, S. Bux, J. Snyder, *Dalton Trans.*, 2015,44, 6767-6774.

32. Thermoelectric Enhancement in $BaGa_2Sb_2$ by Zn-Doping.
U. Aydemir*, A. Zevalkink, A. Ormeci, Z. M. Gibbs, S. Bux, and G. J. Snyder, *Chem. Mat.*, **2015**, 27, 1622.

31. Inelastic Neutron Scattering Study of the Lattice Dynamics in the clathrate Compound $BaGe_5$.
C. Candolfi*, U. Aydemir, M. M . Koza, M. Baitinger, F. Steglich, Yu. Grin, *J. Phys.: Condens. Matter*, 2015, 27, 485401.

30. High temperature thermoelectric Properties of Zn-doped $Eu_5In_2Sb_6$.
S. Chenakian, U. Aydemir*, A. Zevalkink, S. Bux, J. Fleurial, J. Snyder, *J. Mater. Chem. C*, 2015, 3, 10518-10524.

29. Computational and experimental investigation of $TmAgTe_2$ and XYZ_2 compounds, a new group of thermoelectric materials identified by first principles high throughput screening.
H. Zhu, G. Hautier, U. Aydemir, Z. M. Gibbs, G. Li, S. Bajaj, J.-H. Poehls, D. Broberg, W. Chen, A. Jain, M. Asta, G. J. Snyder, K. Persson, and G. Ceder*, *J. Mater. Chem. C*, 2015, 3, 10554-10565.

28. $Ca_3[BN_2]I_3$: The First Halide-Rich Alkaline Earth Nitridoborate with Isolated $[BN_2]^{3-}$ Units
T. Ezgi Toros, M. Yahyaoglu, U. Aydemir, C. Drathen, L. Akselrud, Y. Prots, P. Höhn, M. Somer*
Z. Anorg. Allg. Chem., 2015, 641, 2014–2019.

27. Electronic Structure and Thermoelectric Properties of Pnictogen-Substituted $ASn_{1.5}Te_{1.5}$ (A = Co, Rh, Ir) Skutterudites.
A. Zevalkink*, K. Star, U. Aydemir, J-P. Fleurial, S. Bux, T. Vo, P. von Allmen, *J. Appl. Phys.*, 2015, 118, 035107

26. Enhanced Thermoelectric Properties of $Sr_5In_2Sb_6$ via Zn-doping.
S. Chenakian, A. Zevalkink, U. Aydemir, S. Bux, J. Fleurial, J. Snyder*, *J. Mater. Chem. A*, 2015, 3, 10289-10295.

25. Thermoelectric properties and electronic structure of the Zintl phase $Sr_5In_2Sb_6$ and the $Ca_{5-x}Sr_xIn_2Sb_6$ solid solution.
A. Zevalkink, S. Chenakian, U. Aydemir, A. Ormeci, G. Pomrehn, S. Bux, J. Fleurial, J. Snyder*, *J. Phys.: Cond. Matter*, 2015, 27, 015801.

24. High Temperature Transport Properties of $BaZn_2Sn_2$.
U. Aydemir*, A. Zevalkink, S. Bux, G. J. Snyder, *J. All. Comp.*, 2015, 622, 402.

23. $BaGe_6$ and $BaGe_{6-x}$: Incommensurately Ordered Vacancies as Electron Traps.
L. Akselrud, A. Wosylus, R. Castillo, U. Aydemir, Yu. Prots, W. Schnelle, Yu. Grin, U. Schwarz*, *Inorg. Chem.*, 2014, 53, 12699.

22. High temperature thermoelectric properties of the type-I clathrate $Ba_8Ni_x\square_yGe_{46-x-y}$.
U. Aydemir, C. Candolfi, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin*, *J. Phys. Cond. Matter*, 2014, 26, 485801.

21. Thermoelectric properties of the $Ca_5Al_{2-x}In_xSb_6$ solid solution.
A. Zevalkink, J. Swallow, S. Ohno, U. Aydemir, S. Bux, G. J. Snyder*, *Dalton Trans.*, 2014, 43, 15872.

20. Synthesis, Crystal Structure and Magnetic Properties of $Li_{0.44}Eu_3[B_3N_6]$.
I. Kokal, U. Aydemir*, Yu. Prots, T. Förster, J. Sichelschmidt, M. Yahyaoglu, G. Auffermann, W. Schnelle, F. Schappacher, R. Pöttgen, M. Somer*, *J. Solid State Chem.*, 2014, 210, 96.

19. Synthesis, Crystal Structure and Physical Properties of the Type-I Clathrate $Ba_{8-\delta}Ni_x\square_ySi_{46-x-y}$.
U. Aydemir*, C. Candolfi, A. Ormeci, H. Borrmann, U. Burkhardt, Y. Oztan, N. Oeschler, M. Baitinger, F. Steglich, Yu. Grin*, *Inorg. Chem.*, 2012, 51, 4730.

18. High temperature thermoelectric properties of the type-I clathrate $Ba_8Au_xSi_{46-x}$.
C. Candolfi*, U. Aydemir, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin*, *J. Appl. Phys.* 2012, 111, 043706.

17. Low-temperature thermoelectric, galvanomagnetic, and thermodynamic properties of the type-I clathrate $Ba_8Au_xSi_{46-x}$.
U. Aydemir, C. Candolfi*, A. Ormeci, Y. Oztan, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin, *Phys. Rev. B*, 2011, 84, 195137.

16. Low-temperature magnetic, galvanomagnetic, and thermoelectric properties of the type-I clathrates $Ba_8Ni_xSi_{46-x}$.
C. Candolfi*, U. Aydemir, A. Ormeci, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin, *Phys. Rev. B*, 2011, 83, 205102.

15. Multiband conduction in the type-I clathrate $Ba_8Ge_{43}\square_3$.
C. Candolfi*, A. Ormeci, U. Aydemir, M. Baitinger, N. Oeschler, F. Steglich, Yu. Grin, *Phys. Rev. B*, 2011, 84, 205118.

14. Transport properties of the clathrate $BaGe_5$.
C. Candolfi*, U. Aydemir, A. Ormeci, W. Carrillo-Cabrera, U. Burkhardt, M. Baitinger, N. Oeschler, F. Steglich, and Yu. Grin*, *J. Appl. Phys.*, 2011, 110, 043715.

13. Vibrational Spectra and Quantum Chemical Calculations of the Pure and Mixed Cluster Anions $[Si_xGe_{4-x}]^{4-}$ and $[Ge_xSn_{4-x}]^{4-}$ (x = 0-4) in Compounds with Potassium and Cesium.
A. Ormeci, U. Aydemir, M. Somer*, *Z. Anorg. Allg. Chem.*, 2011, 637, 907.

12. Syntheses, Crystal Structures, Magnetic Properties, and Vibrational Spectra of Nitridoborate-Halide Compounds $Sr_2[BN_2]Br$ and $Eu_2[BN_2]X$ (X = Br, I) with Isolated $[BN_2]^{3-}$ Units.
I. Kokal, U. Aydemir, Yu. Prots, W. Schnelle, L. Akselrud, P. Höhn, M. Somer*, *Z. Kristallogr.*, 2011, 226, 633.

11. Thermoelectric Properties of the Clathrate I $Ba_8Ge_{43}\square_3$.
C. Candolfi*, U. Aydemir, M. Baitinger, N. Oeschler, F. Steglich and Yu. Grin, *J. Electron. Mater.*, 2010, 39, 2039-2042.

10. $BaGe_5$: A New Type of Intermetallic Clathrate.
U. Aydemir, L. Akselrud, W. Carrillo-Cabrera, C. Candolfi, N. Oeschler, M. Baitinger, F. Steglich, Yu. Grin*, *J. Am. Chem. Soc.*, 2010, 132, 10984.

9. Crystal structure and transport properties of $Ba_8Ge_{43}\square_3$.
U. Aydemir, C. Candolfi, H. Borrmann, M. Baitinger, A. Ormeci, W. Carrillo-Cabrera, C. Chubilleau, B. Lenoir, A. Dauscher, N. Oeschler, F. Steglich, Yu. Grin*, *Dalton Trans.*, 2010, 39, 1078.

8. Atomic ordering and thermoelectric properties of the n-type clathrate $Ba_8Ni_{3.5}Ge_{42.1}\square_{0.4}$.
L. T. K. Nguyen, U. Aydemir, M. Baitinger, E. Bauer, H. Borrmann, U. Burkhardt, J. Custers, A. Haghighirad, R. Hofler, K. D. Luther, F. Ritter, W. Assmus, Yu. Grin, S. Paschen*, *Dalton Trans.*, 2010, 39, 1071.

7. Physical Properties of Single-Crystalline $Ba_8Ni_{3.5}Ge_{42.1}\square_{0.4}$.
L. T. K. Nguyen, U. Aydemir, M. Baitinger, J. Custers, A. Haghighirad, R. Hofler, K. D. Luther, F. Ritter, Yu. Grin, W. Assmus and S. Paschen*, *J. Electron. Mater.*, 2010, 39, 1386-1389.

6. α- and β-$Na_2[BH_4][NH_2]$: Two modifications of a complex hydride in the system $NaNH_2$–$NaBH_4$; syntheses, crystal structures, thermal analyses, mass and vibrational spectra.
M. Somer*, S. Acar, C. Koz, I. Kokal, P. Höhn, R. Cardoso-Gil, U. Aydemir, L. Akselrud, *J. Alloys Compd.*, 2010, 491, 98.

5. The Metallic Zintl Phase Ba_3Si_4 – Synthesis, Crystal Structure, Chemical Bonding, and Physical Properties.
U. Aydemir, A. Ormeci, H. Borrmann, B. Böhme, F. Zurcher, B. Uslu, T. Goebel, W. Schnelle, P. Simon, W. Carrillo-Cabrera, F. Haarmann, M. Baitinger, R. Nesper, H. G. von Schnering, Yu. Grin*, *Z. Anorg. Allg. Chem.*, 2008, 634, 1651.

4. $Cs_4Ge_9 \cdot en$: A Novel Compound with $[Ge_9]^{4-}$ Clusters – Synthesis, Crystal Structure and Vibrational Spectra.
W. Carrillo-Cabrera, U. Aydemir, M. Somer*, A. Kircali, T. F. Fässler, S. D. Hoffmann, *Z. Anorg. Allg. Chem.*, 2007, 633, 1575.

3. Synthesis of the intermetallic clathrate $Na_2Ba_6Si_{46}$ by oxidation of Na_2BaSi_4 with HCl.
B. Böhme, U. Aydemir, A. Ormeci, W. Schnelle, M. Baitinger, Yu. Grin*, *Sci. Technol. Adv. Mat*., 2007, 8, 410.

2. Crystal structure of tetrapotassium diarsenidozincate, K_4ZnAs_2.
Y. Prots, U. Aydemir, S. S. Ozturk, M. Somer*, *Z Kristallogr. NCS*, 2007, 222, 163.

1. Vibrational spectra of compounds with the cluster anions $[E_4]^{4-}$: M_4E_4 (M = K, Rb, Cs; E = Ge, Sn) and beta-Na_4Sn_4.
M. Somer*, U. Aydemir, M. Baitinger, H. G. von Schnering, *Z. Anorg. Allg. Chem.*, 2006, 632, 1281.

Non-Peer-Reviewed Articles

3. Themed issue on the chemistry of thermoelectric materials.
U. Aydemir and G. Jeffrey Snyder, *J. Mater. Chem. C*, 2015, **3**, 10332-10335 **(Editorial**)

2. Ball milling of the clathrate-I $Ba_8Ni_4Ge_{42}$.
S. Scudino, U. Aydemir, M. Sakaliyska, M. Baitinger, K. B. Surreddi, Yu. Grin and J. Eckert, in *Advanced Processing of Novel Functional Materials - APNFM2008*, 23-25 January 2008, Dresden, Germany (Pub. No: 260939).

1. Characterization of Ge-based clathrates oxidized in air by means of TEM and SEM.
C. Hébert, B. Bartova, M. Cantoni, U. Aydemir and M. Baitinger, in *EMC 2008 14th European Microscopy Congress 1–5 September 2008, Aachen, Germany*, eds. S. Richter and A. Schwedt, Springer Berlin Heidelberg, 2008, pp. 531-532.

Scientific Reports

2. New Developments in Clathrate Research.
M. Baitinger, L. Akselrud, U. Aydemir, *et al.*, Scientific Report 2009-2010, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany.

1. Intermetallic Clathrates Revisited.
M. Baitinger, U. Aydemir, B. Böhme, *et al.*, Scientific Report 2006-2008, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany.

ORAL & POSTER PRESENTATIONS

41. U. Aydemir, "High Efficiency Antimony-Based Zintl Thermoelectrics for Energy Harvesting", *Eduard-Zintl-Kolloquium,* Technical University of Darmstadt, Jan. 22, 2020, Darmstadt, Germany (**Colloquium Speaker**).

40. U. Aydemir, M. Yahyaoglu, X. Wang, "Ultrahigh Figure-of-Merit of Cu_2Se with Carbon Coated Boron Nanoparticles", 15th Nanoscience and Nanotechnology Conference, Nov. 03 – 06, 2019, Antalya, Turkey (**Invited Speaker**).

39. U. Aydemir, "Snyder effect: A distinct parameter to boost the performance of rich family of thermoelectric materials", *2019 The North American Thermoelectric (Na-Te / Snyder) Workshop, August* 30 – September 02, **2019**, Evanston, USA (**Invited Speaker**).

38. M. Özen, M. Yahyaoğlu, I. Veremchuk, U. Burkhardt, Y. Grin, U. Aydemir*, "Optimizing Electronic and Thermal Transport Properties of n-type Mg_3Sb_2", *The 38th Annual International Conference on Thermoelectrics,* June 30 – July 4, **2019**, Gyeongju, Korea (**Poster**)

37. M. Yahyaoğlu, M. Özen, V. Tshitoyan, H. Ji, A. Jain, C. Candolfi, U. Aydemir*, "Electronic and Thermal Transport Properties of Cu_7Te_5", *The 38th Annual International Conference on Thermoelectrics,* June 30 – July 4, **2019**, Gyeongju, Korea (**Poster**)

36. U. Aydemir, "Melt-Centrifuged $(Bi,Sb)_2Te_3$: Engineering Microstructure toward High Thermoelectric Efficiency", *The 38th Annual International Conference on Thermoelectrics,* June 30 – July 4, **2019**, Gyeongju, Korea (**Oral**)

35. U. Aydemir, "KABAM: Boron and Advanced Materials Research", *Symposium in Honor of the Retirement of Prof. Mehmet S. Somer,* June 21, **2019**, Koc University, Istanbul, Turkey (**Oral**)

34. M. Yahyaoğlu, M. Özen, B. Mete, U. Aydemir*, "Tuning the Thermoelectric Properties of Cu2Se by B-doping", *International Symposium on Boron,* April 17-19, **2019**, Nevsehir, Turkey (**Poster**)

33. U. Aydemir, "Giant Enhancement of the Figure-of-merit Over a Broad Temperature Range in Nano-boron Incorporated Cu2Se", *International Symposium on Boron,* April 17-19, **2019**, Nevsehir, Turkey (**Oral, Member of Scientific Committee**)

32. U. Aydemir, "Ca9Zn4+xSb9 ve InxCeyCo4Sb12+z: Designing and optimization of Zintl Phases with High Thermoelectric Efficiency", *30th National Chemistry Congress,* November 5 – 8, **2018**, Gazimagusa, Turkish Republic of Northern Cyprus (**Oral**)

31. U. Aydemir, "Novel Methods for Increasing the Efficiency of Thermoelectric Materials", *CPC-XII: 12th Chemical Physics Congress,* October 12 - 13, **2018**, Safranbolu, Turkey (**Invited Speaker**)

30. U. Aydemir, "Bor ve Ötesi", *Fen Fakültesi'nde 1 Gün*, August 10, **2018**, Koc University, Istanbul, Turkey (**Oral**)

29. U. Aydemir, "Phase Boundary Mapping & Melt Centrifugation for Achieving High Efficiency TE Materials", *Chemistry Seminar*, July 27, **2018**, Institut Jean Lamour, Nancy, France (**Invited Speaker**).

28. U. Aydemir, "Metal Phosphides as Overlooked TE Materials", *37th Annual International Conference on Thermoelectrics & 16th European Conference on Thermoelectrics,* July 1 - 5, **2018**, Caen, France (**Oral**)

27. U. Aydemir, " Zintl Thermoelectrics for Energy Harvesting", *Chemistry Seminar*, May 04, **2018**, Boğaziçi University, Istanbul, Turkey (**Invited Speaker**).

26. U. Aydemir, " Zintl Thermoelectrics as Functional Materials for Waste Heat Energy Harvesting and Solid State Cooling", 7th Condensed Matter Physics Workshop in Izmir, April 13, **2018**, Izmir, Turkey (**Invited Speaker**).

25. U. Aydemir, " Thermoelectric Materials for Cooling Applications", Arçelik Smart Materials Technologies Workshop, November 01, **2017**, Istanbul, Turkey (**Invited Speaker**).

24. U. Aydemir, "Thermoelectrics for Solid State Cooling and Waste Heat Energy Harvesting", *Interdisciplinary Symposium for Up-and-coming Materials Scientists*, June 8-9, **2017**, Osaka, Japan (**Invited Speaker**)

23. U. Aydemir, A. Zevalkink, S. Bux, G. J. Snyder, "Chain-Forming Zintl Phases as Promising Thermoelectric Materials", *14th European Conference on Thermoelectrics*, September 20-23, **2016**, Lisbon, Portugal (**Invited Speaker**)

22. U. Aydemir, "Thermoelectrics as Functional Materials for Waste Heat Energy Harvesting", *Science Seminar*, April 20, **2016**, Koc University, Istanbul, Turkey (**Oral**)

21. U. Aydemir, J.-H. Poehls, H. Zhu, G. Hautier, Z. M. Gibbs, G. Li, S. Bajaj, D. Broberg, W. Chen, A. Jain, M. A. White, M. Asta, K. A. Persson, G. Ceder, G. J. Snyder, "Experimental and Computational Investigation of XYZ_2 Compounds (*e.g.*, $TmAgTe_2$ and $YCuTe_2$) as a New Group of Thermoelectric Materials", *2015 MRS Fall Meeting & Exhibit*, November 29 – December 4, **2015**, Boston, Massachusetts, USA (**Oral**)

20. U. Aydemir, J.-H. Poehls, S. Bajaj, H. Zhu, Z. M. Gibbs, A. Jain, G. Hautier, G. J. Snyder, " $YCuTe_2$: A promising novel thermoelectric material", *34th Annual International Conference on Thermoelectrics & 13th European Conference on Thermoelectrics*, June 28 - July 2, **2015**, Dresden, Germany (**Oral**)

19. U. Aydemir, "Thermoelectrics: From Waste Heat into Electricity", *Science Seminar*, April 30, **2015**, Koc University, Istanbul, Turkey (**Oral**)

18. U. Aydemir, A. Zevalkink Williams, S. Chanakian, S. Bux, G. J. Snyder, "Thermoelectrics: From Waste Heat into Electricity", *5th International Advances in Applied Physics and Materials Science Congress & Exhibit*, April 15-19, **2015**, Mugla, Turkey (**Invited speaker, Member of the scientific committee**)

17. U. Aydemir, A. Zevalkink, A. Ormeci, S. Bux, G. J. Snyder, " Zintl Thermoelectrics for Power Generation in Space", *Nuclear and Emerging Technologies in Space 2015 (NETS)*, February 23-26, **2015**, Albuquerque, New Mexico, USA (**Oral**)

16. U. Aydemir, A. Zevalkink Williams, S. Bux, G. J. Snyder, "Thermoelectric Properties of the Zintl Phases in the System Ba-In-Sb", *2014 MRS Fall Meeting & Exhibit*, November 30 – December 5, **2014**, Boston, Massachusetts, USA (**Oral**)

15. U. Aydemir, A. Zevalkink Williams, S. Bux, G. J. Snyder, "Thermoelectric Properties of the Zintl Phases in the Systems Ba-Zn-Sn and Ba-Ga-Sb", *International Conference on Thermoelectrics*, July 6-10, **2014**, Nashville, Tennessee, USA (**Oral**)

14. U. Aydemir, M. Baitinger, Yu. Grin, "Phase Formation of the Clathrate $BaGe_5$", *The 9th Workshop on Reactive Metal Processing*, February 21-22, **2014**, Pasadena, California, USA (**Poster**).

13. U. Aydemir, M. Somer, "Production of Spherical Magnesium Powder by Disc Atomization", *Mechanical and Chemical Industry Company Energetic Materials Workshop*, November 22, **2013**, Ankara, Turkey (**Oral**).

12. U. Aydemir, C. Candolfi, A. Ormeci, L. Akselrud, M. Baitinger, Yu. Grin, "Thermoelectric Properties of the Clathrate $BaGe_5$", *2012 MRS Spring Meeting,* April 9 – 13, **2012**, San Francisco, California, USA (**Poster**).

11. U. Aydemir, "$BaGe_5$: A new type of intermetallic clathrate", *Baltic Boat Conference,* June 18 – 21, **2010**, Baltic Sea (**Oral**).

10. U. Aydemir, H. Borrmann, C. Hébert, L. T. K. Nguyen, U. Burkhardt, M. Baitinger, Yu. Grin, "Existence Region of Type-I Clatrates in the System Ba – Ni – Ge", *25th European Crystallographic Meeting,* August 16 – 21, **2009**, Istanbul, Turkey (**Poster**).

9. U. Aydemir, N. T. K. Lien, J. Custers, R. Höfler, F. Widder, H. Borrmann, W. Schnelle, C. Hebert, B. Lenoir, C. Candolfi,, E. Alleno, C. Godart, M. Baitinger, S. Bühler-Paschen, Yu. Grin, "Synthesis and transport properties of the type-I clathrates $Ba_8Ni_{3.8+x}Ge_{42.2-x}$ (x = 0, 0.2, 0.4)", *28th International / 7th European Conference on Thermoelectrics*, July 26 – 30, **2009**, Freiburg, Germany (**Poster**).

8. U. Aydemir, H. Borrmann, "Synthesis and crystal growth of $ZnSiP_2$ and FeSi for experimental charge density analyses", *DFG Meeting: Proposal Colloquium SPP 1178,* February 4 – 5, **2009**, Kloster Banz, Germany (**Poster**).

7. U. Aydemir, "X-ray Powder Diffraction", *Sigma 5 Common PhD Seminer: X-Ray Methods in Solids,* July 17, **2008**, Dresden, Germany (**Oral**).

6. U. Aydemir, S. Leoni, H. Borrmann, W. Schnelle, U. Burkhardt, Y. Prots, M. Baitinger, "TaNiSi: A preparation route to refractory compounds", *Advanced Processing for Novel Functional Materials – APNFM 2008,* January 23 – 25, **2008**, Dresden, Germany (**Poster**).

5. U. Aydemir, "General overview about the CMA project $Ba_8(Ni_xGe_y\square_z)Ge_{40}$ ($x + y + z = 6$)", *CMA Meeting,* November 18 – 19, **2007**, TU WIEN, Austria (**Oral**).

4. U. Aydemir, A. Ormeci, H. Borrmann, W. Schnelle, P. Simon, W. Carrillo-Cabrera, M. Baitinger and Yu. Grin, "Synthesis, Characterization and Reactivity of the Metallic Zintl Phase Ba_3Si_4", *11th European Conference on Solid State Chemistry*, September 11 – 13, **2007**, Caen, France (**Poster**)

3. U. Aydemir, "Sample Preparation and Phase Range Investigations on $Ba_8Ni_xGe_{46-x}$ clathrates", *CMA Meeting*, October 23 – 25, **2006**, TUWIEN Vienna, Austria (**Oral**).

2. U. Aydemir, M. Baitinger, Yu. Grin., "Investigation of the Ternary Clathrates of $Ba_8(Ni_xGe_y\square_z)Ge_{40}$ ($x + y + z = 6$)", *20th National Chemistry Congress*, September 4 – 8, **2006**, Kayseri, Turkey (**Poster**)

1. U. Aydemir, "Ni substituted Ge clathrates", *Baltic Boat Conference*, May **2006,** Stockholm, Sweden (**Oral)**

<u>Presented by Colleagues</u>

20. <u>J. Yu</u> , C. Fu, Y. Liu, K. Xia, U. Aydemir, T. Chasapis, G. Snyder, X. Zhao, T. Zhu, "Unique role of refractory Ta alloying in enhancing the figure of merit of NbFeSb thermoelectric materials", *37th Annual International Conference on Thermoelectrics & 16th European Conference on Thermoelectrics*, July 1 - 5, **2018**, Caen, France (**Oral**)

19. <u>M. Wood</u>**,** U. Aydemir, G. Jeffrey Snyder, "Observation of Valence band crossing: The Thermoelectric Properties of the $CaZn_2Sb_2$-$CaMg_2Sb_2$ Solid Solution", *37th Annual International Conference on Thermoelectrics & 16th European Conference on Thermoelectrics*, July 1 - 5, **2018**, Caen, France (**Oral**)

18. S. Miller, P. Gorai, U. Aydemir, A. Goyal, S. A. Barnett, T. O. Mason, V. Stevanovic, E. Toberer, G. J. Snyder, "SnO: An Oxide Thermoelectric Candidate", *36th Annual International Conference on Thermoelectrics*, July 31 – August 3, **2017**, Pasadena, CA, USA (**Poster**)

17. S. Kang, J.-H. Pohls, U. Aydemir, P. Qiu, C. C. Stoumpos, M. A. White, X. Shi, L. Chen, M. G. Kanatzidis, G. J. Snyder, "Enhanced Stability and zT in Cu_2Se by Li Doping", *36th Annual International Conference on Thermoelectrics*, July 31 – August 3, **2017**, Pasadena, CA, USA (**Oral**)

16. A. Jain, G. J. Snyder, U. Aydemir, S. Ohno, Z. Gibbs, G. Li, G. Hautier, G. Yu, F. Ricci, M. A. White, J.-H. Pohls, M. Asta, D. Broberh, K. Persson, H. Zhu, W. Chen, "Prediction and Experimental Validation of New Bulk Thermoelectrics Compositions from High-Throughput Computations", *36th Annual International Conference on Thermoelectrics*, July 31 – August 3, **2017**, Pasadena, CA, USA (**Oral**)

15. J.-H. Pohls, U. Aydemir, H. Zhu, G. Hautier, S. Bajaj, A. Jain, W. Chen, G. J. Snyder, M. A. White, "Computational and Experimental Investigations of a Novel Class of High-Performance Thermoelectric Compounds", *Institute for Research in Materials Annual General Meeting and Research Day*, June 28, **2016**, Halifax, Canada (**Poster**)

14. S. Ohno, U. Aydemir, A. Zevalkink, S. Chanakian, S. Bux, G. J. Snyder, "$Ca_9Zn_{4+x}Sb_9$ Zintl phase as a cheap, non-toxic thermoelectric material with tunable carrier concentration", *The 35th International Conference & The 1st Asian Conference on Thermoelectrics*, May 29-June 2, **2016**, Wuhan, China (**Oral**)

13. S. Ohno, U. Aydemir, S. D. Kang, G. J. Snyder, "RCuTe$_2$ (R = Y, Dy): a new class of thermoelectric materials with CuTe$_4$-based layered structure", *The 35th International Conference & The 1st Asian Conference on Thermoelectrics*, May 29-June 2, **2016**, Wuhan, China (**Poster**)

12. S. Bux, A. Zevalkink, D. Uhl, U. Aydemir, Y. Hu, T. Vo, P. Von Allmen, G. J. Snyder, S. Kauzlarich, J.-P. Fleurial, "Structure-thermoelectric properties relationships in Yb-Mn-Sb Zintl phases", *34th Annual International Conference on Thermoelectrics & 13th European Conference on Thermoelectrics*, June 28 - July 2, **2015**, Dresden, Germany (**Oral**)

11. S. Chanakian, A. Zevalkink, U. Aydemir, Z. Gibbs, G. Pomrehn, J.-P. Fleurial, S. Bux, G. J. Snyder, "High Temperature Thermoelectric Characterization of Zn-doped $Sr_5In_2Sb_6$ and $Eu_5In_2Sb_6$", *34th Annual International Conference on Thermoelectrics & 13th European Conference on Thermoelectrics*, June 28 – July 2, **2015**, Dresden, Germany (**Poster**)

10. A. Zevalkink, K. Star, U. Aydemir, G. J. Snyder, J.-P. Fleurial, S. Bux, T. Co, P. von Allmen, "Electronic Structure and Thermoelectric Properties of Pnictogen-Substituted ASn$_{1.5}$Te$_{1.5}$ (A =Co, Rh, Ir) Skutterudites", *34th Annual International Conference on Thermoelectrics & 13th European Conference on Thermoelectrics*, June 28 - July 2, **2015**, Dresden, Germany (**Poster**)

9. S. Ohno, U. Aydemir, S. Chanakian, S. K. Bux, G. J. Snyder, "Thermoelectric properties of cheap, non-toxic Zintl phase: $Ca_9Zn_{4+x}Sb_9$", *34TH Annual International Conference on Thermoelectrics & 13TH European Conference on Thermoelectrics*, June 28 - July 2, **2015**, Dresden, Germany (**Oral**)

8. M. Ikeda, U. Aydemir, M. Baitinger, R. Cardoso, J. Custers, R. Höfler, L.T.K. Nguyen, F. Widder, Yu. Grin, and S. Paschen," Transport properties of type-I clathrate compounds", *1st International Conference on Complex Metallic Alloys and their Complexity*, October 4 – 7, **2009**, Nancy, France (**Poster**).

7. L. T. K. Nguyen, U. Aydemir, M. Baitinger, J. Custers, A. Haghighirad, R. Höfler, K. D. Luther, F. Ritter, Yu. Grin, W. Assmus, and S. Paschen, "Physical Properties of Single Crystalline Clathrate I $Ba_8Ni_{3.5}Ge_{42}\square_{0.5}$", *28th International / 7th European Conference on Thermoelectrics*, July 26 – 30, **2009**, Freiburg, Germany (**Poster**).

6. M. Baitinger, U. Aydemir, H. Borrmann, C. Candolfi, W. Carrillo-Cabrera, N.T.K. Lien, N. Oeschler, I. Veremchuk, S. Bühler-Paschen, Yu. Grin, "Point defects and physical properties of clathrates", *28th International / 7th European Conference on Thermoelectrics*, July 26 – 30, **2009**, Freiburg, Germany (**Poster**).

5. R. Höfler, T.K.L. Nguyen, U. Aydemir, J. Custers, M. Baitinger, Yu. Grin, W. Assmus, S. Paschen, "Resistivity and Hall Measurements on the Clathrate-System $Ba_8Ni_4Ge_{42}$", *ARW Workshop on Correlated Thermoelectrics: Properties and Applications of Thermoelectric Materials*, September 20 – 26, **2008,** Hvar, Croatia (**Poster**).

4. C. Hébert, B. Bartova, M. Cantoni, U. Aydemir, and M. Baitinger, Characterization of Ge-based clathrates oxidized in air by means of TEM and SEM, *14th European Microscopy Congress*, September 1 – 5, **2008**, Aachen, Germany (**Oral**).

3. M. Sakaliyska, U. Aydemir, S. Scudino, M. Baitinger, K. B. Surreddi, Yu. Grin, J. Eckert, "Mechanical Milling of $Ba_8Ni_xGe_{46-x}$ Clathrates", *Advanced Processing for Novel Functional Materials – APNFM 2008*, January 23 – 25, **2008**, Dresden, Germany (**Oral**).

2. S. Acar, I. Kokal, M. Somer, P. Höhn, U. Aydemir, R. Cardoso-Gil and L. Akselrud, "$Na_2[BH_4][NH_2]$: A Novel complex hydride in $NaNH_2$-$NaBH_4$ system; Syntheses, Crystal structures, Thermal Analyses, Mass and Vibrational Spectra", *11th European Conference on Solid State Chemistry*, W49, September 11 – 13, **2007**, Caen, France (**Poster**).

1. I. Kokal, M. Somer, U. Aydemir, W. Carrillo-Cabrera, Y. Prots, W. Schnelle, "$Li_{0.42}Eu_3[B_3N_6]$: Synthesis, Crystal Structure, Vibrational Spectroscopy and Magnetic Properties", *11th European Conference on Solid State Chemistry*, W39, September 11 – 13, **2007**, Caen, France (**Poster**).

PROJECT REVIEWS, SCHOOLS, AND WORKSHOPS ATTENDED

15. *IMSERC Powder X-ray diffraction workshop*, July 6, **2017**, Northwestern University, Illinois, USA.

14. *2016 International Summer School on Thermoelectrics*, July 25 – 27, **2016**, the Colorado School of Mines, Colorado, USA.

13. *Materials Project Annual Review Meeting*, August 3, **2015**, Lawrence Berkeley National Laboratory, California, USA.

12. *Materials Project Bi-Annual Review Meeting*, April 6, **2015**, San Francisco, California, USA.

11. *Materials Project Annual Review Meeting*, August 6, **2014**, Lawrence Berkeley National Laboratory, California, USA.

10. *Workshop on WinCSD Program Package for Crystallographic Calculations*, August 24 – 25, **2011**, MPI-CPfS, Dresden, Germany.

9. *Workshop on JANA 2006 - Program for Structure Analysis of Crystals Periodic in Three or More Dimensions from Diffraction Data* -, September 22 – 24, **2010**, MPI-CPfS, Dresden, Germany.

8. *Workshop on Electron Localizability and Chemical Bonding*, March 29th – April 1st, **2009**, MPI-CPfS,

Dresden, Germany.

7. *Complex Metallic Alloys: Surfaces and Coatings*, 3rd European School in Materials Science, May 26 – 31, **2008**, Ljubljana, Slovenia.

6. *Workshop on XD2006 program package: Advanced Methods in X-ray Charge Density Analysis: Extracting Properties from a Multipole Refinement*, September 3 – 6, **2007**, Martina Franca, Italy.

5. *Properties and Application of Complex Metallic Alloys: 2nd European School in Materials Science*, May 21 – 26, **2007**, Ljubljana, Slovenia.

4. *The 11th BCA/CCG Intensive Teaching School in X-ray Structure Analysis*, March 24th – April 2nd, **2007**, Trevelyan College, University of Durham, UK.

3. *The Second Bilateral Workshop on Solid State and Materials Chemistry*, July 17 – 19, **2006**, MPI-CPfS, Dresden, Germany.

2. *Workshop of the AK Computational Crystallography of the DGK Electron Density – Theory and Applications*, February 19 – 21, **2006**, Aachen, Germany.

1. *The First Bilateral Workshop on Current Topics in Advanced Materials*, May 17 – 20, **2003**, Istanbul, Turkey.

MEMBERSHIPS

TÜBA-Young Academy
Science Academy – Young Scientist Working Group
Turkish Chemical Society (TCS)
International Thermoelectric Society (ITS)
Materials Research Society (MRS)
American Chemical Society (ACS)
European Integrated Center for the Development of New Metallic Alloys and Compounds (C-MAC, Successor Organization of NoE CMA)

LANGUAGES

Turkish: Native, English: Fluent, German: Intermediate