

BIOGRAPHICAL SKETCH

Yan Chen, PhD

Neutron Scattering Scientist, VULCAN
Neutron Scattering Division
Oak Ridge National Laboratory
P.O. Box 2008 MS-6475, Oak Ridge, TN 37831-6475
Phone: (865) 576-7268, E-mail: cheny1@ornl.gov
<https://www.ornl.gov/staff-profile/yan-chen>

Interests

- Advanced *in situ* neutron and X-ray scattering.
- Functional and structural materials: synthesis-structure-performance relationship.
- Deformation mechanisms of engineering materials for superior mechanical behaviors.
- Structural transition in atomic scale under non-equilibrium conditions or external stimuli.
- Crystallography and defect chemistry in the complex oxides.

Education

- B. S. Materials Science and Engineering, Tsinghua University, Beijing, China, 2007
M. S. Materials Science and Engineering, Tsinghua University, Beijing, China, 2009
Ph. D. Materials Science and Engineering, University of Central Florida, Orlando, USA, 2013

Research and Professional Experience

- Neutron Scattering Scientist, VULCAN, Spallation Neutron Source, ORNL (2017 – Present)
- Research Associate, Spallation Neutron Source, ORNL (2013 – 2017)
- Graduate Research Assistant, Department of Mechanical, Materials and Aerospace Engineering, University of Central Florida, 2009 – 2013.
- Visiting Student Scholar, Spallation Neutron Source, ORNL (2012)
- Visiting Student Scholar, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland (2011)
- Graduate Research Assistant, Department of Materials Science and Engineering, Tsinghua University, China (2007 – 2009)

Honors and Awards

- 2012 Honorable Mentions of the 2012 Dr. Bernard S. Baker Student Award for Fuel Cell Research
2012 Poster Award at the MCARE Graduate Student Poster Contest, Clearwater, FL
2012 Conference Registration Fellowship in Ceramics Gordon Research Conference, South Hadley, MA
2007 Gua-Chuan Scholarship for Overall Excellence, Department of Materials Science and Engineering, Tsinghua University, Beijing, China
2005 Gua-Chuan Scholarship for Overall Excellence, Department of Materials Science and Engineering, Tsinghua University, Beijing, China
2004 Scholarship for Overall Excellence, Tsinghua University, Beijing, China

Professional Activities

- **Professional Society Affiliation:** Material Research Society; American Electrochemistry Society (past); The American Ceramic Society (past)
- **Reviewer of Academic Journals:** Nano Energy; ACS Applied Materials & Interfaces; Journal of Power Sources; Journal of the American Ceramic Society; Fuel Cells; Energy & Fuels (ACS); Materials and Design; Journal of

Publications

➤ News releases and highlights

1. *Neutrons analyze advanced high-strength steels to improve vehicle safety and efficiency*
(<https://neutrons.ornl.gov/content/neutrons-analyze-advanced-high-strength-steels-improve-vehicle-safety-and-efficiency>)
2. *Researchers Improve Performance of Cathode Material by Controlling Oxygen Activity*
(<https://neutrons.ornl.gov/content/researchers-improve-performance-cathode-material-controlling-oxygen-activity>,
http://jacobsschool.ucsd.edu/news/news_releases/release.sfe?id=1975)
3. *Neutrons offer guide to getting more out of solid-state lithium-ion batteries*
(<https://www.ornl.gov/news/neutrons-offer-guide-getting-more-out-solid-state-lithium-ion-batteries>)

➤ Journals

(2019)

1. Liu X[#], **Chen Y[#]**, Hood ZD, Ma C, Yu S, Sharafi A, Wang H, An K, Sakamoto J, Siegel DJ, Cheng Y, Jalarvo NH, Chi M, Elucidating the mobility of H⁺ and Li⁺ ions in (Li_{6.25-x}H_xAl_{0.25})La₃Zr₂O₁₂ via correlative neutron and electron spectroscopy, *Energy & Environmental Science*, 12, 945-951, 2019.
2. Rauch HA, **Chen Y**, An K, Yu H, *In Situ* Investigation of Stress-Induced Martensitic Transformation in Granular Shape Memory Ceramic Packings, *Acta Materialia*, 168, 15, 362-375, 2019.
3. Fan Q, Yang S, Liu J, Liu H, Lin K, Liu R, Hong C, Liu L, **Chen Y**, An K, Liu P, Shi Z, Yang Y, Mixed-conducting interlayer boosting the electrochemical performance of Ni-rich layered oxide cathode materials for lithium ion batteries, *Journal of Power Sources*, 421, 1, 91-99, 2019.
4. Shang YY, Wu Y, He JY, Zhu XY, Liu SF, Huang HL, An K, **Chen Y**, Jiang SH, Wang H, Liu XJ, Lu ZP, Solving the strength-ductility tradeoff in the medium-entropy NiCoCr alloy via interstitial strengthening of carbon, *Intermetallics*, 106, 77-87, 2019.

(2018)

5. Wang H[#], **Chen Y[#]**, Hood ZD, Keum JK, Pandian AS, Chi M, An K, Liang C, Sunkara MK, Revealing the Structural Stability and Na-Ion Mobility of 3D Superionic Conductor Na₃SbS₄ at Extremely Low Temperatures, *ACS Applied Energy Materials*, 1(12), 7028-7034, 2018.
6. Yu D, **Chen Y**, Huang L, An K, Tracing Phase Transformation and Lattice Evolution in a TRIP Sheet Steel under High-Temperature Annealing by Real-Time In Situ Neutron Diffraction, *Crystals*, 8, 9, 360, 2018. (**Industry**)
7. Yu D, Huang L, **Chen Y**, Komolwit P, An K, Real-Time In Situ Neutron Diffraction Investigation of Phase-Specific Load Sharing in a Cold-Rolled TRIP Sheet Steel, *JOM*, 70, 8, 1576–1586, 2018. (**Industry**)
8. Liu H, Liu H, Seymour ID, Chernova NA, Wiaderek KM, Trease NM, Hy S, **Chen Y**, An K, Zhang M, Borkiewicz OJ, Lapidus S, Qiu B, Xia Y, Liu Z, Chupas PJ, Chapman KW, Whittingham MS, Grey CP, Meng YS, Identifying the chemical and structural irreversibility in LiNi_{0.8}Co_{0.15}Al_{0.05}O₂ – a model compound for classical layered intercalation, *Journal of Materials Chemistry A*, 6, 9, 4189-4198, 2018.
9. Yang T, Matthews A, Xu N, **Chen Y**, An K, Ma D, Huang K, Understanding Structure-Activity Relationships in Sr_{1-x}Y_xCoO_{3-δ} through in-situ Neutron Diffraction and Electrochemical Measurements, *ACS Applied Materials & Interfaces*, 10, 42, 35984–35993, 2018.
10. Fu S, Bei H, **Chen Y**, Liu TK, Yu D, An K, Deformation mechanisms and work-hardening behavior of transformation-induced plasticity high entropy alloys by in-situ neutron diffraction, *Materials Research Letters*, 6, 11, 620-626, 2018.
11. Liu Y, Li CW, Liu C, **Chen Y**, An K, Landskron K, Probing the electrolyte infiltration behaviour of activated carbon supercapacitor electrodes by in situ neutron scattering using aqueous NaCl as electrolyte, *Carbon*, 136, 139-142, 2018.

12. Lee C, Song G, Gao MC, Feng R, Chen P, Brechtel J, **Chen Y**, An K, Guo WT, Poplawsky J, Li S, Samaei AT, Chen W, Hu A, Choo H, Liaw PK, Lattice Distortion in a Strong and Ductile Refractory High-entropy Alloy, *Acta Materialia*, 160, 158-172, 2018.
13. Wang D, **Chen Y**, Mu J, Zhu ZW, Zhang H, Wang YD, An K, An in situ neutron diffraction study of plastic deformation in a $\text{Cu}_{46.5}\text{Zr}_{46.5}\text{Al}_7$ bulk metallic glass composite, *Scripta Materialia*, 153, 118–121, 2018.
14. Xie Q, **Chen Y**, Yang P, Zhao Z, Wang YD, An K, In-situ neutron diffraction investigation on twinning/detwinning activities during tension-compression load reversal in a twinning induced plasticity steel, *Scripta Materialia*, 150, 168-172, 2018.
15. Yang T, Mattick V, **Chen Y**, An K, Ma D, Huang K, Crystal Structure and Transport Properties of Oxygen-Deficient Perovskite $\text{Sr}_{0.9}\text{Y}_{0.1}\text{CoO}_{3-\delta}$, *ACS Applied Energy Materials*, 1, 2, 822–832, 2018.
16. Lugovy M, Aman A, Orlovskaya N, Slyunyayev V, Graule T, Kuebler J, Reece MJ, **Chen Y**, Ma D, An K, Time and frequency dependent mechanical properties of LaCoO_3 -based perovskites: Neutron diffraction and domain mobility, *Journal of Applied Physics*, 124, 205104, 2018.
- (2017)
17. **Chen Y**, Cheng Y, Li J, Feyngenson M, Heller W T, Liang C and An K, Lattice-cell orientation disorder in complex spinel oxides, *Advanced Energy Materials*, 7(4), 1601950, 2017. (**Journal Cover**)
18. **Chen Y**, Yu D, An K, Stress-induced lattice distortion in LiMn_2O_4 spinel by *in-situ* neutron diffraction, *Materials Research Letters*, 5(2), 89–94 2017.
19. Sims Z, Rios O, Weiss D, Turchi P, Perron A, Lee J, Li T, Hammons J, Bagge-Hansen M, Willey T, An K, **Chen Y**, King A and McCall S, High Performance Aluminum-Cerium Alloys for High-Temperature Applications, *Materials Horizons*, 4, 1070-1078, 2017. (**Journal Cover**)
20. Yang T, Wang J, **Chen Y**, An K, Ma D, Vogt T and Huang K, A Combined Variable Temperature Neutron Diffraction and Thermogravimetric Analysis Study on a Promising Oxygen Electrode $\text{SrCo}_{0.9}\text{Nb}_{0.1}\text{O}_{3-\delta}$ for Reversible Solid Oxide Fuel Cells, *ACS Applied Materials & Interfaces*, 9(40), 34855-34864, 2017.
21. Yang H, Yu D, **Chen Y**, Mu J, Wang Y, An K, *In-situ* TOF neutron diffraction studies of cyclic softening in superelasticity of a NiFeGaCo shape memory alloy, *Materials Science & Engineering A*, 680, 324–328, 2017.
22. Wang D, Mu J, **Chen Y**, Qi Y, Wu W, Wang Y, Xu H, Zhang H, An K, A study of stress-induced phase transformation and micromechanical behavior of CuZr-based alloy by in-situ neutron diffraction, *Journal of Alloys and Compounds*, 696, 1096–1104, 2017.
23. Li H, Aulin Y, Frazer L, Borguet E, Kakodkar R, Feser J, **Chen Y**, An K, Dikin D A, Ren F, Structure evolution and thermoelectric properties of carbonized polydopamine thin films, *ACS Applied Materials & Interfaces*, 9(8), 6655–6660, 2017.
24. Aman A, Jordan R, **Chen Y**, Stadelmann R, Lugovy M, Orlovskaya N, Payzant EA, dela Cruz CR, Reece MJ, Graule T, Kuebler J, Non-congruence of high-temperature mechanical and structural behaviors of LaCoO_3 based perovskites, *Journal of the European Ceramic Society*, 37(4), 1563–1576, 2017.
- (2016)
25. Liu H, **Chen Y**, Hy S, An K, Venkatachalam S, Qian D, Zhang M and Meng S, Operando lithium dynamics in the Li-rich layered oxide cathode material via neutron diffraction, *Advanced Energy Materials*, 6, 1502143, 2016.
26. Wang H, **Chen Y**, Hood Z D, Sahu G, Peng R, Pandian A S, Keum J K, Wu Z, An K, Liang C, An air-stable Na_3SbS_4 superionic conductor prepared by a rapid and economic synthetic procedure, *Angewandte Chemie International Edition*, 55, 8551-8555, 2016.
27. Qiu B, Zhang M, Wu L, Wang J, Xia Y, Qian D, Liu H, Hy S, **Chen Y**, An K, Zhu Y, Liu Z, Meng Y S, Gas-solid interfacial modification of oxygen activity in layered oxide cathodes for lithium-ion batteries, *Nature Communications*, 7, 12108, 2016.
28. Yang H, **Chen Y**, Bei H, dela Cruz C R, Wang Y D, An K, Annealing effects on the structural and magnetic properties of off-stoichiometric Fe-Mn-Ga ferromagnetic shape memory alloys, *Materials & Design*, 104, 327–332, 2016.
29. Chen K, Tang J, **Chen Y**, Compositional inhomogeneity and segregation in $(\text{K}_{0.5}\text{Na}_{0.5})\text{NbO}_3$ ceramics, *Ceramics International*, 42(8), 9949–9954, 2016.

30. Zhao Y, **Chen Y**, Chen K, Improvement in synthesis of $(\text{K}_{0.5}\text{Na}_{0.5})\text{NbO}_3$ powders by Ge^{4+} acceptor doping, *Frontiers of Materials Science*, 10(4), 422–427, 2016.
- (2015)
31. **Chen Y**, Rangasamy E, Liang C and An K, Origin of high Li^+ conduction in doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ garnets, *Chemistry of Materials*, 27, 5491–5494, 2015.
32. **Chen Y**, Rangasamy E, dela Cruz C R, Liang C and An K, A study of suppressed formation of low-conductivity phases in doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ garnets by in situ neutron diffraction, *Journal of Materials Chemistry A*, 3, 22868–22876, 2015.
33. **Chen Y**, Cai L, Liu Z, dela Cruz C R, Liang C and An K, Correlation of anisotropy and directional conduction in $\beta\text{-Li}_3\text{PS}_4$ fast Li^+ conductor, *Applied Physics Letters*, 107, 013904, 2015.
34. **Chen Y**, Orlovskaya N, Payzant E A, Graule T and Kuebler J, A search for temperature induced time-dependent structural transitions in 10 mol% Sc_2O_3 –1 mol% CeO_2 – ZrO_2 and 8 mol% Y_2O_3 – ZrO_2 electrolyte ceramics, *Journal of the European Ceramic Society*, 35, 951–958, 2015.
35. Liu H, Qian D, Verde M G, Zhang M, Baggetto L, An K, **Chen Y**, Carroll K J, Lau D, Chi M, Veith G M and Meng Y S, Understanding the role of NH_4F and Al_2O_3 surface Co-modification on lithium-excess layered oxide $\text{Li}_{1.2}\text{Ni}_{0.2}\text{Mn}_{0.6}\text{O}_2$, *ACS Applied Materials & Interfaces*, 7, 19189–19200, 2015.
36. Wang S, **Chen Y**, Zhang L, Ren C, Chen F and Brinkman K S, Two-step reactive aid sintering of $\text{BaZr}_{0.8}\text{Y}_{0.2}\text{O}_{3-\delta}$ proton conducting ceramics, *Journal of Electronic Materials*, 44, 4898–4906, 2015.
- (2014)
37. **Chen Y**, Yang L, Ren F and An K, Visualizing the structural evolution of LSM/ x YSZ composite cathodes for SOFC by *in-situ* neutron diffraction, *Scientific Reports*, 4, 5179, 2014.
38. Wang S, **Chen Y**, Fang S, Zhang L, Tang M, An K, Brinkman K S and Chen F, Novel chemically stable $\text{Ba}_3\text{Ca}_{1.18}\text{Nb}_{1.82-x}\text{Y}_x\text{O}_{9-\delta}$ proton conductor: improved proton conductivity through tailored cation ordering, *Chemistry of Materials*, 26, 2021–2029, 2014.
39. Yu D, Bei H, **Chen Y**, George E P and An K, Phase-specific deformation behavior of a relatively tough NiAl – $\text{Cr}(\text{Mo})$ lamellar composite, *Scripta Materialia*, 84–85, 59–62, 2014.
40. Yu D, An K, **Chen Y** and Chen X, Revealing the cyclic hardening mechanism of an austenitic stainless steel by real-time in situ neutron diffraction, *Scripta Materialia*, 89, 45–48, 2014.
41. Sahu G, Rangasamy E, Li J, **Chen Y**, An K, Dudney N and Liang C, A high-conduction Ge substituted Li_3AsS_4 solid electrolyte with exceptional low activation energy, *Journal of Materials Chemistry A*, 2, 10396, 2014. (**Journal Cover**)
42. Aman A, **Chen Y**, Lugovy M, Orlovskaya N, Reece M J, Ma D, Stoica A D and An K, *In-situ* neutron diffraction of LaCoO_3 perovskite under uniaxial compression. I. Crystal structure analysis and texture development, *Journal of Applied Physics*, 116, 013503, 2014.
43. Lugovy M, Aman A, **Chen Y**, Orlovskaya N, Kuebler J, Graule T, Reece M J, Ma D, Stoica A D and An K, *In-situ* neutron diffraction of LaCoO_3 perovskite under uniaxial compression. II. Elastic properties, *Journal of Applied Physics*, 116, 013504, 2014.
- (2013 and before)
44. **Chen Y**, Aman A, Lugovy M, Orlovskaya N, Wang S, Huang X, Graule T and Kuebler J, Residual stress and biaxial strength in Sc_2O_3 – CeO_2 – ZrO_2 / Y_2O_3 – ZrO_2 layered electrolytes, *Fuel Cells*, 13, 6, 1068–1075, 2013.
45. **Chen Y**, Orlovskaya N, Graule T and Kuebler J, Microstructure and mechanical properties of $\text{Ni}/(\text{Sc}_2\text{O}_3)_{0.1}(\text{CeO}_2)_{0.01}(\text{ZrO}_2)_{0.89}$ cermet anode for solid oxide fuel cells, *Journal of the European Ceramic Society*, 33, 557–564, 2013.
46. Restrepo D, Hick SM, Griebel C, Alarco'n J, Giesler K, **Chen Y**, Orlovskaya, N and Blair RG, Size controlled mechanochemical synthesis of ZrSi_2 , *Chemical Communications*, 49, 707–709, 2013.
47. **Chen Y**, Orlovskaya N, Klimov M, Huang X, Cullen D, Graule T and Kuebler J, Three-layered YSZ/SCSZ/YSZ electrolytes for intermediate temperature SOFC Part I: Design and manufacturing, *Fuel Cells*, 12, 5, 722–731, 2012.
48. Orlovskaya N, **Chen Y**, Miller N, Abernathy H, Haynes D, Tucker D and Gemmen R, Glycine-nitrate synthesis of Sr doped $\text{La}_2\text{Zr}_2\text{O}_7$ pyrochlore powder, *Advances in Applied Ceramics*, 110, 1, 54–57, 2011.

49. **Chen Y** and Zhang XW, Morphotropic phase boundary and electrical properties of PMN-PZN-PT ceramics, *Rare Metal Materials and Engineering*, 38, 294–297, 2009.

➤ **Conference Proceedings**

1. Cole DP, Henry TC, An K, **Chen Y**, Haynes RA, Damage Precursor Assessment in Aerospace Structural Materials, ASME 2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (SMASIS), SMASIS2018-7908, 2018.
2. Huang L, Chen X, Yu D, **Chen Y**, An K, Residual Stress Distribution in a Hydroformed Advanced High Strength Steel Component: Neutron Diffraction Measurements and Finite Element Simulations, SAE Technical Paper 2018-01-0803, 2018. (**Industry**)
3. Aman A, Gentile R, **Chen Y**, Xu Y, Huang X and Orlovskaya N, Numerical simulation of electrolyte-supported planar button solid oxide fuel cells, the Proceedings of the 2012 COMSOL Conference in Boston, 2012.
4. **Chen Y**, Orlovskaya N, Miller N, Abernathy H, Haynes D, Tucker D and Gemmen R, $\text{La}_{1.97}\text{Sr}_{0.03}\text{Zr}_{2}\text{O}_7$ pyrochlore powder for advanced energy application, Advances in Science and Technology, Trans Tech Publications, Switzerland, 62, 56-60, 2010.

➤ **Conference Oral and Poster Presentations**

1. **Chen Y**, Wang H, An K, “Fast ion transport tunnels in solid-state crystalline electrolytes”, 2018 MRS Fall Meeting & Exhibit, Boston, MA, November 25 –30, 2018.
2. **Chen Y**, Chen KP, An K, “Visualization of ferroelastic domain switching in $(\text{K},\text{Na},\text{Li})(\text{Nb},\text{Ta})\text{O}_3$ lead-free piezoelectric ceramics by in situ neutron diffraction”, MS&T 2017, Pittsburgh, PA, October 8-12, 2017. (**Invited**)
3. **Chen Y**, Cai L, Liu Z, dela Cruz C R, Liang C and An K, “Anisotropy in $\beta\text{-Li}_3\text{PS}_4$ fast Li^+ conductor”, 2015 MRS Fall Meeting & Exhibit, Boston, MA, November 29 – December 4, 2015.
4. **Chen Y**, Rangasamy E, Liang C and An K, “Structural Origin of High Li^+ Conduction in Doped $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ Garnets”, 2015 MRS Fall Meeting & Exhibit, Boston, MA, November 29 – December 4, 2015.
5. **Chen Y**, Rangasamy E, Liang C and An K, “Dopant effects on the synthesis of garnet-type fast Li-ion conductor by in-situ neutron diffraction”, 2014 MRS Fall Meeting & Exhibit, Boston, MA, November 30 – December 5, 2014.
6. **Chen Y**, Yang L, Ren F and An K, “Visualizing the structural evolution of LSM/ x YSZ composite cathodes for SOFC by in situ neutron diffraction”, 2014 MRS Fall Meeting & Exhibit, Boston, MA, November 30 – December 5, 2014.
7. **Chen Y**, Cheng Y, Feygenson M, Liang C and An K, “Unraveling Ordering Structures of $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ Cathode by Neutron Diffraction and Computer Simulation”, American Conference on Neutron Scattering, Knoxville, TN, June 1-5, 2014.
8. **Chen Y**, An K and Liang C, “Study of Average and Local Structures of Variedly Ordered $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ By Neutron Diffraction”, 225th ECS Meeting, Orlando, FL, May 11-15, 2014.
9. **Chen Y**, Orlovskaya N, Graule T, Kuebler J, “Thermal Residual Stress and Biaxial Strength of $(\text{Y}_2\text{O}_3)_{0.08}(\text{ZrO}_2)_{0.92}/(\text{Sc}_2\text{O}_3)_{0.1}(\text{CeO}_2)_{0.01}(\text{ZrO}_2)_{0.89}$ Multi-layered Electrolytes for Intermediate Temperature Solid Oxide Fuel Cells”, 37th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2013.
10. **Chen Y**, Orlovskaya N, Graule T, Kuebler J, “Mechanical Properties of $\text{Ni}/(\text{Sc}_2\text{O}_3)_{0.1}(\text{CeO}_2)_{0.01}(\text{ZrO}_2)_{0.89}$ Porous Anodes”, 37th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2013.
11. **Chen Y**, Orlovskaya N, Klimov M, Huang X, Kuebler J, Graule T, “Scandia and Ceria Stabilized Zirconia/ Yttria Stabilized Zirconia Layered Electrolytes”, Gordon Research Conferences, Solid State Studies in Ceramics, New Insights and New Paradigms for Fracture and Deformation, South Hadley, MA, August 12-17, 2012.
12. **Chen Y**, Torres J, Orlovskaya N, Graule T, Kuebler J, “Mechanical Properties of $\text{Ni}/(\text{Sc}_2\text{O}_3)_{0.1}(\text{CeO}_2)_{0.01}(\text{ZrO}_2)_{0.89}$ Cermet Anode for SOFC”, Gordon Research Conferences, Solid State Studies in Ceramics, New Insights and New Paradigms for Fracture and Deformation, South Hadley, MA, August 12-17, 2012.
13. **Chen Y**, Orlovskaya N, Neutzler J, Huang X, Graule T, Kuebler J, “ $(\text{Sc}_2\text{O}_3)_{0.1}(\text{CeO}_2)_{0.01}(\text{ZrO}_2)_{0.89}/(\text{Y}_2\text{O}_3)_{0.08}(\text{ZrO}_2)_{0.92}$ layered electrolytes”, 36th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 22-27, 2012.

14. **Chen Y**, Orlovskaya N, Multi-layered $(Y_2O_3)_{0.08}(ZrO_2)_{0.92}/(Sc_2O_3)_{0.1}(CeO_2)_{0.01}(ZrO_2)_{0.89}$ Electrolytes, International Conference on Materials Challenges in Alternative and Renewable Energy, Clear Water, the American Ceramic Society, February 2012.
15. **Chen Y**, Dinan J, Orlovskaya N, Stress effect on the microstructure and vibrational properties of $LaCoO_3$ based perovskites, 35th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 23-28, 2011
16. **Chen Y**, Orlovskaya N, Neutzler J, Huang X, “Tape casting of $(Sc_2O_3)_{0.10}(CeO_2)_{0.01}(ZrO_2)_{0.89}$ thin electrolytes for the IT SOFCs”, 35th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 23-28, 2011
17. **Chen Y**, Orlovskaya N, Miller N, Abernathy H, Haynes D, Tucker D, Gemmen R, $La_{1.97}Sr_{0.03}Zr_2O_7$ pyrochlore powder for advanced energy application, CIMTEC 12th International Ceramic Congress, Montecatini Terme, Italy, June 6-11, 2010.