Curriculum Vitae

Feng Deng

Professor
State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics,
National Center for Magnetic Resonance in Wuhan
Wuhan Institute of Physics and Mathematics
Chinese Academy of Sciences (CAS)
West Xiaohongshan 30#, Wuhan 430071, P. R. China
Tel: +86-027-87198820
Email: dengf@wipm.ac.cn
Web: http://denggroup.org/

Education

09/1984-06/1988 B.S. in Physical Chemistry, Department of Chemistry, Chengdu University of Science and Technology (now Sichuan University), P. R. China

09/1988 -06/1991 M.S. in Nuclear Magnetic Resonance, Wuhan Institute of Physics, CAS (supervisor: Prof. Youru Du)

09/1993 - 06/1996 Ph.D in Nuclear Magnetic Resonance, Wuhan Institute of Physics, CAS (supervisor: Prof. Chaohui Ye and Prof. Youru Du)

Postdoctoral Training

10/1997-12/1998 Research Fellow, Chemistry Department, Texas A & M University, USA (with Prof. James F. Haw; In-situ solid-state NMR studies of heterogeneous catalytic reactions on zeolites)

Faculty Academic Appointments

07/1991-05/1993 Research assistant, Wuhan Institute of Physics, CAS

06/1993-06/1996 Assistant professor, Wuhan Institute of Physics, CAS

07/1996-11/1999 Associate professor, Wuhan Institute of Physics and Mathematics, CAS

12/1999-present Professor, Wuhan Institute of Physics and Mathematics, CAS; Group Leader of Solid-state NMR Spectroscopy and Heterogeneous Catalysis

09/2008-present Vice director of National Centre for Magnetic Resonance in Wuhan

04/2005-11/2016 Vice director of State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics

12/2016-present Director of State Key Laboratory of Magnetic Resonance and Atomic and Molecular Physics

Main research activities:

Solid-state NMR methodology

Heterogeneous catalysts and catalytic reactions studied by solid-state NMR spectroscopy and DFT calculations

Solid-state NMR characterization of functional materials

Awards:

Wang T. C. Award for Magnetic Resonance Spectroscopy (2000)
Distinguished Young Scholars supported by National Science Foundation of China (Physical Chemistry, 2004)

Academic Positions:

Committee Member of Chinese Magnetic Resonance Society
Committee Member of Chinese Catalysis Society
Committee Member of Chinese Zeolite Society
Committee Member of Chinese Physical Chemistry Society
International Editorial Board of *Solid State Nuclear Magnetic Resonance*
Editorial Board of *Chinese Science Bulletin*
Editorial Board of *Chinese Journal of Magnetic Resonance*
Editorial Board of *Acta Physico-Chimica Sinica*

Publications

More than 300 papers have been published in international journals including *Chem Rev, Acc Chem Res, JACS, Angew Chem Int Ed, PRL, Adv Mater, Nat Commun, Chem Sci, Chem Commun, JPCL, JPC, JCP, PCCP, ACS Catal, J Catal, J Magn Reson, Solid State Nucl Magn Reson etc*, which have been cited over 9600 times by other authors in SCI journals. Selected publications are listed in the following:

1. Xu, J. *; Wang, Q. ; Deng, F.* Metal active sites and their catalytic functions in zeolites: insights from solid-state NMR spectroscopy *Acc. Chem. Res.* **2019**, DOI:10.1021/ acs.accounts.9b00125
2. Zhou, X.; Wang, C.; Chu, Y.Y.; Xu, J.*; Wang, Q.; Qi, G. D.; Zhao, X. L.; Feng, N. D.; Deng, F.* Observation of an oxonium ion intermediate in ethanol dehydration to ethene on zeolite *Nat. Commun.* **2019**, 10:1961.
3. Chu, Y. Y.; Luo, A. Y.; Wang, C.; Deng, F.* Origin of high selectivity of dimethyl ether carbonylation in the 8-membered ring channel of mordenite zeolite *J. Phys. Chem. C*. **2019**, 123: 15503−15512.
4. Xu, X.H.; Li, S. H.; Liu, Q.; Liu, Z.Y.; Yan, W.; Zhao, L.G.; Zhang, W.H.; Zhang, L.; Deng, F.*; Cong, H. J.; Deng, H. X.* Isolated π-interaction sites in mesoporous MOF backbone *f*or repetitive and reversible dynamics in water *ACS Appl. Mater. Interfaces* **2019**, 11: 973-981.
5. Zhai, Y.L.; Zhang, S.L.; Shang, Y.S.; Song, Y.; Wang, W.X.; Ma, T.; Zhang, L.M.; Gong, Y.J.*; Xu, J.; Deng, F. Boosting the turnover number of core-shell Al-ZSM-5@B-ZSM-5 zeolite for methanol to propylene reaction by modulating its gradient acid site distribution and low consumption diffusion *Catal. Sci. Technol.* **2019**, 9: 659-671.
6. Li, S.; Jin, C.H.; Feng, N.D.; Deng, F.; Xiao, L.P.*; Fan, J.* Regulation of acidic properties of WO3-ZrO2 for Friedel-Crafts reaction with surfactant *Catal. Commun.* **2019,** 123:54-58.
7. Wang, C.; Chu, Y. Y.; Xu, J.*; Wang, Q.; Qi, G. D.; Gao, P.; Zhou, X.; Deng, F.* Extra-framework aluminum-assisted initial C-C bond formation in methanol-to-olefins conversion on zeolite H-ZSM-5 *Angew. Chem. Int. Ed.* **2018**, 57: 10197-10201.

8. Gao, P.; Wang, Q.; Xu, J.*; Qi, G. D.; Wang, C.; Zhou, X.; Zhao, X. L.; Feng, N. D.; Liu, X. L.; Deng, F.* Brønsted/Lewis acid synergy in methanol-to-aromatics conversion on Ga-modified ZSM-5 zeolites as studied by solid-state NMR spectroscopy *ACS Catal.* **2018**, 8: 69-74.
9. Gao, P; Xu, J.*; Qi, G. D.; Wang, C.; Wang, Q.; Zhao, Y.X.; Zhang, Y. H.; Feng, N. D.; Zhao, X. L.; Li, J. L.; Deng, F.* A mechanistic study of methanol-to-aromatics reaction over Ga-modified ZSM‑5 zeolites: understanding the dehydrogenation process *ACS Catal.* **2018**, 8: 9809-9820.
10. Wang, W. Y.; Hu, H.; Xu, J.*; Wang, Q.; Qi, G. D.; Wang, C.; Zhao, X. L.; Zhou, X.; Deng, F.* Tuning Pd-Au bimetallic catalysts for heterogeneous parahydrogen-induced polarization *J. Phys. Chem. C* **2018**,122:1248-1257
11. Liu, F.; Feng, N. D.*; Yang, L. X.; Wang, Q.; Xu, J.; Deng, F.* Enhanced photocatalytic performance of carbon-coated TiO_{2-x} with surface-active carbon species *J. Phys. Chem. C*. **2018**,122:10948-10955.
12. Qi, G. D.; Wang, Q.; Xu, J.*; Wu, Q. M.; Wang, C.; Zhao, X. L.; Meng, X. J.; Xiao, F. S. Deng, F.* Direct observation of tin sites and their reversible interconversion in zeolites by solid-state NMR spectroscopy *Commun. Chem.* **2018**,1: 22
13. Li, W. Z,; Wang, Q.; Xu, J.*; Aussenac, F.; Qi, G. D.; Zhao, X. L.; Gao, P.; Wang, C.; Deng, F.* Probing the surface of γ-Al_2O_3 by oxygen-17 dynamic nuclear polarization enhanced solid-state NMR spectroscopy *Phys. Chem. Chem. Phys.* **2018**, 20:17218-17225
14. Wang, Q.; Trébosc, J.; Li, Y. X.; Lafon, O.; Xin, S. H.; Xu, J.; Hu, B. W.; Feng, N. D.; Amoureux, J. P.*; Deng, F.* Uniform signal enhancement in MAS NMR of half-integer quadrupolar nuclei using quadruple-frequency sweeps *J. Magn. Reson.* **2018**,293:92-103
15. Li, S. H.* ; Li, J.; Tang, J.; Deng F.* Host-guest interaction of styrene and ethylbenzene in MIL-53 studied by solid-state NMR *Solid State Nucl. Magn. Reson.* **2018**, 90:1-6.
16. Sheng, N.; Chu, Y.Y.; Xin, S.H.; Wang, Q.; Liu, X.L.; Xu, J.; Xiao, F.S.*; Deng, F.* New insights into the di-n-propylamine (DPA) molecule as an organic structural directing agent (OSDA) in the crystallization of AlPO4-11 molecular sieve *Inorg. Chem. Front.* **2018**, 5 : 1633-1639.
17. Li, M.P.; Ren, H.; Sun, F.X.; Tian, Y.Y.; Zhu, Y.L.; Li, J.L.; Mu, X.; Xu, J. ; Deng, F.; Zhu, G. S.* Construction of Porous Aromatic Frameworks with Exceptional Porosity via Building Unit Engineering *Adv. Mater.* **2018**, 30:1804169
18. Zhang, W.N.; Chen, J.R. ; Xu, S.T.; Chu, Y.Y.; Wei, Y.X.; Zhi, Y.C.; Huang, J.D.; Zheng, A.M.; Wu, X.Q.; Meng, X.J.; Xiao, F.S.; Deng, F.; Liu, Z.M.* Methanol to Olefins Reaction over Cavity-type Zeolite: Cavity Controls the Critical Intermediates and Product Selectivity *ACS Catal.* **2018**, 8 : 10950-10963.
19. Zhang, Y.F. ; Liu, Y.S.; Sun, L.Y.; Zhang, L.M.; Xu, J.; Deng, F.; Gong, Y.J.* Synthesis of EU-1/ZSM-48 Co-Crystalline Zeolites from High-Silica EU-1 Seeds: Tailoring Phase Proportions and Promoting Long Crystalline-Phase Stability *Chem. Eur. J.* **2018**, 24 : 6595-6605.
20. Liu, F.; Feng, N.D.*; Wang, Q.; Xu, J.; Qi, G.D.; Wang, C.; Deng, F.* Transfer Channel of Photoinduced Holes on a TiO_2 Surface As Revealed by Solid-State Nuclear Magnetic Resonance and Electron Spin Resonance Spectroscopy *J. Am. Chem. Soc.* **2017**, 139, 10020-10028.

21. Zheng, A.M.*; Liu, S.B.*; Deng, F.* ^{31}P NMR Chemical Shifts of Phosphorus Probes as Reliable and Practical Acidity Scales for Solid and Liquid Catalysts *Chem. Rev.* **2017**, 117: 12475-12531.
22. Wang, C.; Xu, J.*; Wang, Q.; Zhou, X.; Qi, G. D.; Feng,N.D.; Liu, X.L.; Meng, X.J.; Xiao, F.X.; Deng, F.* Host-Guest Interactions and Their Catalytic Consequences in Methanol to Olefins Conversion on Zeolites Studied by ^{13}C–^{27}Al Double-Resonance Solid-State NMR Spectroscopy *ACS Catal.* **2017**, 7:6094-6103.
23. Wang, C.; Sun, X.Y.; Xu, J.*; Qi, G.D.; Wang, W.Y.; Zhao, X.L.; Li, W.Z.; Wang, Q.; Deng, F.* Impact of Temporal and Spatial Distribution of Hydrocarbon Pool on Methanol Conversion over H-ZSM-5 *J. Catal.* **2017**, 354, 138–151
24. Wang, X. M.; Xu, J.*; Qi, G. D.; Wang, C.; Wang, W. Y.; Gao, P.; Wang, Q.; Liu, X. L.; Feng, N. D.; Deng, F.* Carbonylation of Ethane with Carbon Monoxide over Zn-modified ZSM-5 Zeolites Studied by In situ Solid-state NMR spectroscopy *J. Catal.* **2017**, 345:228-235.
25. Xin, S.H.; Wang, Q.*; Xu, J.; Feng, N.D.; Li, W.Z.; Deng, F.* Heteronuclear Correlation Experiments of ^{23}Na-^{27}Al in Rotating Solids *Solid State Nucl. Magn. Reson.* **2017**,84:103–110.
26. Liu, X.L.; Chu,Y.Y.; Wang, Q.; Wang, W.Y.; Wang, C.; Xu, J.*; Deng, F.* Identification of Double Four-ring Units in Germanosilicate ITQ-13 Zeolite by Solid-state NMR Spectroscopy *Solid State Nucl. Magn. Reson.* **2017**, 87: 1–9
27. Wang, W.Y.; Xu, J.*; Zhao, Y.X.; Qi, G.D.; Wang, Q.; Wang, C.; Li, J.L.; Deng, F.* Facet Dependent Pairwise Addition of Hydrogen over Pd Nanocrystal Catalysts Revealed by NMR Using Para-hydrogen-induced Polarization *Phys. Chem. Chem. Phys.* **2017**, 19: 9349-9353.
28. Yi, Y.F.; Li, G.C.; Huang, L.; Chu, Y.Y.; Liu, Z.Q.; Xia, H.Q.; Zheng, A.M.*; Deng, F.* An NMR Scale for Measuring the Base Strength of Solid Catalysts with Pyrrole Probe: a Combined Solid-state NMR Experiment and Theoretical Calculation Study *J. Phys. Chem. C* **2017**, 121, 3887-3895.
29. Li, J.; Li, S.H.*; Zheng, A.M.; Liu, X.L.; Yu, N.Y.; Deng, F.* Solid-State NMR Studies of Host-Guest Interaction Between UiO-67 and Light Alkane at Room Temperature *J. Phys. Chem. C.* **2017**, 121: 14261–14268
30. Chu,Y.Y.; Li, G.C.; Huang, L.; Yi, X.F.; Xia, H.Q.; Zheng, A.M.*; Deng, F.* External or internal surface of H-ZSM-5 zeolite, which is more effective for the Beckmann rearrangement reaction? *Catal. Sci. Technol.* **2017**, 7:2512-2523.
31. Li, S.H.; Li, J.; Zheng, A.M.; Deng, F.* Solid-State NMR Characterization of the Structure and Catalytic Reaction Mechanism of Solid Acid Catalysts *Acta Phys.-Chim. Sin.* **2017**, 33: 270-282
32. Marchetti, A.; Chen, J.; Pang, Z.F.; Li, S.H.; Ling, D.H.; Deng, F.*; Kong, X.Q.* Understanding Surface and Interfacial Chemistry in Functional Nanomaterials via Solid-State NMR *Adv. Mater.* **2017**, 1605895
33. Zheng, A.M.; Li, S.H.; Liu, S. B.*; Deng, F.* Acidic properties and structure-activity correlations of solid acid catalysts revealed by solid-state NMR spectroscopy *Acc. Chem. Res.* **2016**, 49: 655-663.
34. Wang, C.; Wang, Q.; Xu, J.*; Qi, G.D.; Gao, P.; Wang, W.Y.; Zou, Y.Y.; Feng, N.D.; Liu, X.L.; Deng, F.* Direct detection of superamolecular reaction centers in the methanol-to-

olefins conversion over zeolite H-ZSM-5 by ^{13}C-^{27}Al solid-state NMR spectroscopy *Angew. Chem. Int. Ed.* **2016**, 55:2507-2511.
35. Qi, G.D.; Wang, Q.; Xu, J.*; Trebosc, J.; Lafon, O.; Wang, C.; Amoureux, J.P.; Deng F.* Synergic Effect of Active Sites in Zinc-Modified ZSM-5 Zeolites as Revealed by High-Field Solid-State NMR Spectroscopy *Angew. Chem. Int. Ed.* **2016**, 55:15826 –15830.
36. Huang, M.D.; Wang, Q.; Yi, X.; Chu, Y.; Dai, W.L.; Li, L.D.; Zheng, A.M.*; Deng F.* Insight into the formation of the *tert*-butyl cation confined inside H-ZSM-5 zeolite from NMR spectroscopy and DFT calculations *Chem. Commun.* **2016**, 52, 10606-10608.
37. Song, B.T.; Chu, Y.Y.; Li, G.C.; Wang, J.Q.; Lo, A.Y.; Zheng, A.M.*; Deng, F.* Origin of Zeolite Confinement Revisited by Energy Decomposition Analysis *J. Phys. Chem. C* **2016**, 120:27349-27363.
38. Zhou, L.; Li, S.H.*; Qi, G.D.; Su, Y.C.; Li, J.; Zheng, A.M.; Yi, X.;Wang, Q.; Deng, F.* Methanol carbonylation over copper-modified mordenite zeolite: A solidstate NMR study *Solid State Nucl. Magn. Reson.* **2016**, 80: 1–6.
39. Zhou, L.; Li, S.H.*; Li, J.; Wang, Q.; Deng, F.* Valence state alternation of copper species doped in HY zeolite as revealed by paramagnetic relaxation enhancement NMR spectroscopy *Solid State Nucl. Magn. Reson.* **2016**, 74-75: 10–15.
40. Feng, N.D.; Liu, F.; Huang, M.; Zheng, A.M.; Wang, Q.; Chen, T.H.; Cao, G.Y.; Xu, J.; Fan, J.; Deng, F.* Unravelling the Efficient Photocatalytic Activity of Boron-induced Ti^{3+} Species in the Surface Layer of TiO_2 *Sci. Rep.* **2016**, 6:34765.
41. Yi, X.F.; Ding, L.H.; Li, G.C.; Liu, Z.Q.; Xia, H.; Chu, Y.Y.; Zheng, A.M.*; Deng, F.* Insights into the reaction mechanism of propene H/D exchange over acidic zeolite catalysts from theoretical calculations *Catal. Sci. Technol.* **2016**, 6:6328-6338.
42. Chu, Y.Y.; Xue, N.H.; Xu, B.L.; Ding, Q.; Feng, Z.C.; Zheng, A.M.*; Deng, F.* Mechanism of alkane H/D exchange over zeolite H-ZSM-5 at low temperature: a combined computational and experimental study *Catal. Sci. Technol.* **2016**,6:5350-5363.
43. Sheng, N.; Chu, Y.Y.; Xin, S.H.; Wang, Q.; Yi, X.F.; Feng, Z.C.; Meng, X.J.*; Liu, X.L.*; Deng, F.; Xiao, F.S.* Insights of the crystallization process of molecular sieve $AlPO_4$-5 prepared by solvent-free synthesis *J. Am. Chem. Soc.* **2016**, 138:6171−6176.
44. Xu, L.; Ji, X.Y.; Li, S.H.; Zhou, Z.Y.; Du, X.; Sun, J.L.; Deng, F.; Che, S.A.; Wu, P.* Self-Assembly of Cetyltrimethylammonium Bromide and Lamellar Zeolite Precursor for the Preparation of Hierarchical MWW Zeolite *Chem. Mater.* **2016**, 28: 4512-4521.
45. Wang, Q.; Li, Y.X. ; Trébosc, J. ; Lafon, O. ; Xu, J. ; Hu, B.W. ; Feng, N.D. ; Chen, Q. ; Amoureux. J.P.* ; Deng, F.* Population transfer HMQC for half-integer quadrupolar nuclei *J. Chem. Phys.* **2015**, 142: 094201.
46. Li, S. H.; Julien Trébosc J.; Lafon O.*; Zhou L.; Shen M.; Pourpoint F.; Amoureux J.P.*; Deng, F.* Observation of ^{1}H-^{13}C and ^{1}H-^{1}H proximities in a paramagnetic solid by NMR at high magnetic field under ultra-fast MAS. *J. Magn. Reson.* **2015**, 251:36-42.
47. Qi, G. D.; Wang, Q.; Chu, Y. Y.; Xu, J.*; Zheng, A. M.; Su, J. H.; Chen, J. F.; Wang, C.; Wang, W. Y.; Gao, P.; Deng, F.* Room temperature stable zinc carbonyl complex formed in zeolite ZSM-5 and its hydrogenation reactivity: a solid-state NMR study *Chem. Commun.* **2015**, 51: 9177-9180.

48. Wang, C.; Xu, J.*; Qi, G. D.; Gong, Y.J.; Wang, W. Y.; Gao, P.; Wang, Q.; Feng, N. D.; Liu, X.; Deng, F.* Methylbenzene hydrocarbon pool in methanol-to-olefins conversion over zeolite H-ZSM-5 *J. Catal.* **2015**, 332: 127–137.
49. Wang, C.; Yi, X.F.; Xu, J.*; Qi, G.D.; Gao, P.; Wang, W.Y.; Chu, Y.Y.; Wang, Q.; Feng, N.D.; Liu, X.L.; Zheng, A.M.; Deng, F.* Experimental evidence on the formation of ethene through carbocations in methanol conversion over H-ZSM-5 Zeolite *Chem. Eur. J.* **2015**, 21: 12061-12068.
50. Chu, Y.Y.; Ji, P.; Yi, X.F.; Li, S.H.; Wu, P.; Zheng, A.M.*; Deng, F.* Strong or weak acid, which is more efficient for Beckmann rearrangement reaction over solid acid catalysts? *Catal. Sci. Technol.* **2015**, 5: 3675-3681.
51. Chu, Y.Y.; Sun, X.Y.; Yi, X.F.; Ding, L.H.; Zheng, A.M.*; Deng, F.* Slight channel difference influences the reaction pathway of methanol-to-olefins conversion over acidic H-ZSM-22 and H-ZSM-12 zeolites *Catal. Sci. Technol.* **2015**, 5: 3507-3517.
52. Zhou, L.; Li, S.H.*; Su, Y.C.; Li, B.J.; Deng, F.* Paramagnetic relaxation enhancement solid-state NMR studies of heterogeneous catalytic reaction over HY zeolite using natural abundance reactant *Solid State Nucl. Magn. Reson.* **2015**, 66-67: 29–32.
53. Wu, Q.M.; Liu, X.L.; Zhu, L.F.; Ding, L.H.; Gao, P.; Wang, X.; Pan, S.X.; Bian, C.Q.; Meng, X.J.*; Xu, J.; Deng, F.*; Maurer, S.; Muller, U.; Xiao, F.S.* Solvent-Free Synthesis of Zeolites from Anhydrous Starting Raw Solids *J. Am. Chem. Soc.* **2015**, 137:1052-1055.
54. Sun, Q.; Dai, Z.F.; Liu, X.L.; Sheng, N.; Deng, F.; Meng, X.J.; Xiao, F.S.* Highly Efficient Heterogeneous Hydroformylation over Rh-Metalated Porous Organic Polymers: Synergistic Effect of High Ligand Concentration and Flexible Framework *J. Am. Chem. Soc.* **2015**, 137:5204-5209.
55. Su, X.; Xu, S.T.; Tian, P.; Li, J.Z.; Zheng, A.M.; Wang, Q.; Yang, M.; Wei, Y. X.; Deng, F.; Liu, Z.M.* Investigation of the Strong Brønsted Acidity in a Novel SAPO-type Molecular Sieve, DNL-6 *J. Phys. Chem. C* **2015**, 119:2589-2596.
56. Li, S. H.; Pourpoint, F.; Trebosc, J.; Zhou, L.; Lafon, O.; Shen, M.; Zheng, A. M.; Wang, Q.; Amoureux, J. P.*; Deng, F.* Host-Guest Interactions in Dealuminated HY Zeolite Probed by ^{13}C-^{27}Al Solid-State NMR Spectroscopy *J. Phys. Chem. Lett.* **2014**, 5: 3068-3072.
57. Wang, X. M.; Xu, J.*; Qi, G.; Wang, C.; Deng, F.* Alkylation of benzene with carbon monoxide over Zn/H-ZSM-5 zeolite studied by in situ solid-state NMR spectroscopy. *Chem. Commun.* **2014**, 50 : 11382-11384.
58. Zheng, A. M.*; Chu, Y. Y.; Li, S. H.; Su, D. S.; Deng, F.* Insight into the activation of light alkanes over surface-modified carbon nanotubes from theoretical calculations. *Carbon* **2014**, 77 : 122-129.
59. Wang, C.; Chu, Y.; Zheng, A.; Xu, J.*; Wang, Q.; Gao, P.; Qi, G.; Gong, Y.; Deng, F.* New insight into the hydrocarbon pool chemistry of methanol to olefins conversion over zeolite H-ZSM-5 from GC-MS, solid-state NMR spectroscopy and DFT calculations *Chem. Eur. J.* **2014**, 20 :12432-12443.
60. Ye, H. Y.; Li, S. H.; Zhang, Y.; Zhou, L.; **Deng, F.**; Xiong, R. G.* Solid State Molecular Dynamic Investigation of An Inclusion Ferroelectric: (2,6-Diisopropylanilinium) (18-crown-6)BF_4. *J. Am. Chem. Soc.* **2014**, 136: 10033-10040.
61. Wu, Q.; Wang, X.; Qi, G.; Guo, Q.; Pan, S.; Meng, X.; Xu, J.**; Deng,** F.; Fan, F.; Feng, Z.; Li, C.; Maurer, S.; Mueller, U.; Xiao, F.-S.* Sustainable Synthesis of Zeolites without

Addition of Both Organotemplates and Solvents. *J. Am. Chem. Soc.* **2014**, 136:4019-4025.
62. Hung, C. T.; Yu, N. Y.; Chen, C. T.; Wu, P. H.; Han, X. X.; Kao, Y. S.; Liu, T. C.; Chu, Y. Y.; Deng, F.**;** Zheng, A. M.*; Liu, S. B.* Highly nitrogen-doped mesoscopic carbons as efficient metal-free electrocatalysts for oxygen reduction reactions. *J. Mater. Chem. A* **2014**, 2: 20030-20037.
63. Huang, S. J.; Hung, C. T.; Zheng, A. M.; Lin, J. S.; Yang, C. F.; Chang, Y. C.; Deng, F.; Liu, S. B.* Capturing the Local Adsorption Structures of Carbon Dioxide in Polyamine-Impregnated Mesoporous Silica Adsorbents. *J. Phys. Chem. Lett.* **2014**, 5: 3183-3187.
64. Xi, D.; Sun, Q.; Xu, J.**;** Cho, M.; Cho, H. S.; Asahina, S.; Li, Y.; Deng, F.; Terasaki, O.; Yu, J.* In situ growth-etching approach to the preparation of hierarchically macroporous zeolites with high MTO catalytic activity and selectivity. *J. Mater. Chem. A* **2014**, 2: 17994-18004.
65. Liu, B.; Ben, T.*; Xu, J.; Deng, F.; Qiu, S.*, Hydrogen bonding controlled catalysis of a porous organic framework containing benzimidazole moieties. *New J. Chem.* **2014,** 38: 2292-2299.
66. Qi, G. D.; Xu, J.*; Su, J. H.; Chen, J. H.; Wang, X. M.; Deng, F.* Low-temperature reactivity of Zn^{+} ions confined in ZSM-5 zeolite toward carbon monoxide oxidation: insight from in situ DRIFT and ESR spectroscopy *J. Am. Chem. Soc.* **2013,** 135 : 6762-6765.
67. Feng, N. D.; Wang, Q.; Zheng, A. M.; Zhang, Z. F.; Fan, J.; Liu, S. B.; Amoureux, J. P.; Deng, F.* Understanding the high photocatalytic activity of (B,Ag)-codoped TiO_2 under solar-light irradiation with XPS, solid-state NMR and DFT calculations *J. Am. Chem. Soc.* **2013,** 135 : 1607-1616.
68. Wang, Q.; Trebosc, J.L.; Li, Y.X.; Xu, J.; Hu, B.W.; Feng, N.D.; Chen, Q.; Lafon, O.; Amoureux, J. P.; Deng, F.* Signal enhancement of J-HMQC experiments in solid-state NMR involving half-integer quadrupolar nuclei *Chem. Commun.* **2013**, 49: 6653-6655.
69. Li, S.H.; **Deng, F.** Recent Advances of Solid-State NMR Studies on Zeolites *Annu. Rep. NMR Spectro.* **2013**, 78 :1-54.
70. Wang, X.M.; Xu, J.*; Qi, G.D.; Li, B.J.; Wang, C.; Deng, F.* Alkylation of Benzene with methane over ZnZSM-5 zeolites studied with solid-state NMR spectroscopy *J. Phys. Chem. C* **2013**, 117: 4018-4023
71. Zhou, L.; Li, S.H.*; Su, Y.C.; Yi, X.F.; Zheng, A.M.; Deng, F.* Interaction between Histidine and Zn(II) Metal Ions over a Wide pH as Revealed by Solid-State NMR Spectroscopy and DFT Calculations *J. Phys. Chem. B* **2013**, 117: 8954−8965.
72. Yi X.F., Byun Y., Chu Y.Y., Zheng A.M.*, Hong S.B.*, Deng F.* Stability of the Reaction Intermediates of Ethylbenzene Disproportionation over Medium-Pore Zeolites with Different Framework Topologies: A Theoretical Investigation *J. Phys. Chem. C* **2013**, 117: 23626-23637
73. Li, B.J.; Xu, J.*, Han, B.; Wang, X.M.; Qi, G.D.; Zhang Z.F.; Wang, C.; Deng, F.* Insight into dimethyl ether carbonylation reaction over mordenite zeolite from in-situ solid-state NMR spectroscopy *J. Phys. Chem. C* **2013**, 117: 5840-5847.
74. Chu, Y.Y., Han, B., Zheng, A.M.*, Yi, X.F., Deng, F.* Pore Selectivity for Olefin Protonation Reactions Confined inside Mordenite Zeolite: A Theoretical Calculation Study. *J. Phys. Chem. C* **2013**, 117: 2194-2202.

75. Li S.H.*; Zhou L.; Su Y.C.; Han B.; Deng F.* ^{13}C and ^{15}N spectral editing inside histidine imidazole ring through solid-state NMR spectroscopy *Solid State Nucl. Magn. Reson.* **2013**, 54:13–17.
76. Zheng A.M., Liu S.B.*, Deng F.* Acidity characterization of heterogeneous catalysts by solid-state NMR spectroscopy using probe molecules *Solid State Nucl. Magn. Reson.* **2013**, 55-56:12–27.
77. Zhou H.L., Lin R.B., He C.T., Zhang Y.B., Feng N.D., Wang Q., **Deng F.**, Zhang J.P.*, Chen X.M. Direct visualization of a guest-triggered crystal deformation based on a flexible ultramicroporous framework *Nat. Commun.* **2013**, 4:2534
78. Jin, Y.Y., Sun, Q., Qi, G.D., Yang, C.G., Xu, J., Chen, F., Meng, X.J.*, Deng, F., Xiao, F.S.* Solvent-Free Synthesis of Silicoaluminophosphate Zeolites *Angew. Chem. Int. Ed.* **2013**, 52,: 9172-9175.
79. Sun Z.H., Luo J.H.*, Zhang S.Q., Ji C.M., Zhou L., Li S.H.*, Deng F.*, Hong M. Solid-state reversible quadratic nonlinear optical molecular switch with an exceptionally large contrast *Adv. Mater.* **2013**, 25: 4159-4163.
80. Fu, D.W., Cai, H.L., Li, S.H., Ye, Q., Zhou, L., Zhang, W., Zhang, Y., Deng, F., Xiong, R.G.* 4-Methoxyanilinium Perrhenate 18-Crown-6: A New Ferroelectric with Order Originating in Swinglike Motion Slowing Down *Phys. Rev. Lett.* **2013**, 110, 257601.
81. Xu S.T., Zheng A.M., Wei Y.X., Chen J.R., Li J.Z., Chu Y.Y., Zhang M.Z., Wang Q.Y., Zhou Y., Wang J.B., Deng F., Liu Z.M.* Direct Observation of Cyclic Carbenium Ions and Their Role in the Catalytic Cycle of the Methanol-to-Olefin Reaction over Chabazite Zeolites *Angew. Chem. Int. Ed.* **2013**, 52 :11564-11568.
82. Wu, M.; Zheng, A.M.; Deng, F.*; Su, B.L.* Significant photocatalytic activity enhancement of titania inverse opals by anionic impurities removal in dye molecule degradation *Appl. Catal. B* **2013**, 138: 219-228.
83. Xu, R.S.; Zhang, W.P.*; Xu, J.; Tian, Z.J. ; Deng, F.; Han, X.W. Bao, X.H.* Multinuclear Solid-State NMR Studies on the Formation Mechanism of Aluminophosphate Molecular Sieves in Ionic Liquids *J. Phys. Chem. C* **2013**, 117: 5848-5854.
84. Wang, X.M.; Qi, G. Dong; Xu J.*; Li B.J.; Wang, C; Deng, F.* NMR-spectroscopic evidence of intermediate-dependent pathways for acetic acid formation from methane and carbon monoxide over a ZnZSM-5 zeolite catalyst *Angew. Chem. Int. Ed.* **2012**, 51, 3850-3853.
85. Xu, J.; Zheng, A. M.; Wang, X. M.; Qi, G.D.; Su, J.H.; Du, J.F.; Gan, Z.H.; Wu, J.F.; Wang, W.; Deng, F.* Room-temperature activation of methane over Zn modified H-ZSM-5 Zeolites: Insight from solid-state NMR and theoretical calculations. *Chem. Sci.* **2012**, 3:2932-2940.
86. Zheng, A. M.; Han, B.; Li, B. J.; Liu, S. B.*; Deng, F.* Enhancement of Bronsted acidity in zeolitic catalysts due to an intermolecular solvent effect in confined micropores *Chem. Commun.* **2012**, 48 : 6936-6938.
87. Zhang, Y.; Zhang, W.* ; Li, S.H.* ; Ye, Q.; Cai, H.L.; Deng, F.* ; Xiong, R.G.*; Huang, S.P. Ferroelectricity Induced by Ordering of Twisting Motion in a Molecular Rotor *J. Am. Chem. Soc.* **2012,** 134 : 11044-11049.
88. Chu Y., Han B., Zheng A.*, Deng F.* Influence of Acid Strength and Confinement Effect on the Ethylene Dimerization Reaction over Solid Acid Catalysts: A Theoretical Calculation

Study, *J. Phys. Chem. C* **2012**, 116: 12687-12695.
89. Chu Y., Han B., Fang H., Zheng A.*, Deng F.* Influence of acid strength on the reactivity of alkane activation on solid acid catalysts: A theoretical calculation study, *Microporous and Mesoporous Materials*, **2012**, 151: 241-249.
90. Li, Y.X.; Wang, Q.*; Zhang, Z.F.; Yang, J.; Hu, B. W.*; Chen, Q.; Noda, I.; Deng, F.* Covariance spectroscopy with a non-uniform and consecutive acquisition scheme for signal enhancement of the NMR experiments *J. Magn. Reson.* **2012**, 217:106-111.
91. Zhang, Z. F.; Miao, Y. M.; Liu, X. L.; Yang, J.*; Li, C. G.; Deng, F.; Fu, R. Q.* Dual-band selective double cross polarization for heteronuclear polarization transfer between dilute spins in solid-state MAS NMR *J. Magn. Reson.* **2012**, 217 : 92-99.
92. Yu Z., Wang Q., Chen L., Deng F.* Brønsted/Lewis Acid Sites Synergy in H-MCM-22 Zeolite Studied by ^{1}H and ^{27}Al DQ-MAS NMR Spectroscopy *Chin. J. Catal.* **2012**, 33: 129-139.
93. Xu, W. J.; Riikonen, J.; Nissinen, T.; Suvanto, M.; Rilla, K.; Li, B. J.; Wang, Q.; Deng, F.; Lehto, V. P.* Amine Surface Modifications and Fluorescent Labeling of Thermally Stabilized Mesoporous Silicon Nanoparticles *J. Phys. Chem. C* **2012**, 16:22307-22314.
94. Pourpoint, F.; Trebosc, J.; Gauvin, R. M.; Wang, Q.; Lafon, O.; Deng, F.; Amoureux, J.* P. Measurement of Aluminum-Carbon Distances Using S-RESPDOR NMR Experiments *ChemPhysChem* **2012**, 13, 3605-3615.
95. Fang, H.J.; Zheng, A.M.*; Xu, J.; Li, S.H.; Chu, Y.Y.; Chen, L.; Deng, F.* Theoretical Investigation of the Effects of Zeolite Framework on the Stability of Carbenium Ions *J. Phys. Chem. C* **2011**, 115, 7429- 7439.
96. Feng, N. D.; Zheng, A.M.; Wang, Q.; Ren, P.P.; Gao, X.Z.; Liu, S.B.; Deng, F.* Boron Environments in B-Doped and (B, N)-Codoped TiO_2 Photocatalysts: A Combined Solid-State NMR and Theoretical Calculation Study *J. Phys. Chem. C*, **2011**, 2709–2719.
97. Zhiwu Yu, Shenhui Li, Qiang Wang, Anmin Zheng, Jun Xu, Lei Chen, Feng Deng* Bronsted/Lewis Acid Synergy in H-ZSM-5 and H-MOR Zeolites Studied by ^{1}H and ^{27}Al DQ-MAS Solid-State NMR Spectroscopy *J. Phys. Chem. C* **2011**,115: 22320-22327.
98. Yueying Chu, Zhiwu Yu, Anmin Zheng*, Hanjun Fang,Hailu Zhang,Shing-Jong Huang, Shang-BinLiu*, Feng Deng* Acidic Strengths of Brønsted and Lewis Acid Sites in Solid Acids Scaled by ^{31}P NMR Chemical Shifts of Adsorbed Trimethylphosphine *J. Phys. Chem. C* **2011**, 115, 7660-7667.
99. Anmin Zheng, Shing-Jong Huang, Shang-Bin Liu*, Feng Deng* Acid properties of solid acid catalysts characterized by solid-state ^{31}P NMR of adsorbed phosphorous probe *Phys. Chem. Chem. Phys.* **2011**, 13, 14889-14901
100.Qiang Wang, Xinyu. Lu, O. Lafon, J. Trébosc, Feng. Deng*, Bing Hu*, Qun Chen, J.P. Amoureux* Measurement of ^{13}C-^{1}H dipolar couplings in solids by using ultra-fast MAS NMR with symmetry-based sequences *Phys. Chem. Chem. Phys.* **2011**, 13, 5967-5973.
101.Shing-Jong Huang, Chih-Yi Yang, Anmin Zheng, Ningdong Feng, Ningya Yu, Pei-Hao Wu, Yu-Chi Chang, Yin-Chih Lin, Feng Deng* and Shang-Bin Liu*, Acid Properties of Keggin-type Heteropolyacids: New Insights from P-31 MAS NMR of Adsorbed Phosphine Oxide and DFT Calculation Studies, *Chemistry - An Asian Journal*, **2011**, 6:137-148.
102.Anmin Zheng, Shang-Bin Liu*, Feng Deng* Regioselectivity of Carbonium Ion Transition States in Zeolites, *Catalysis Today*, **2011**, 64, 40-45.

103.Qin Zou, Linmin Zhang L, Li S, Gao X, Deng Feng* A solid-state NMR study of structure and segmental dynamics of poly(propylmethacryl-heptaisobutyl-pss)-co-styrene nanocomposites. *Journal of Colloid and Interface Science* **2011**, 355:334-3341.
104.Ben, T.; Pei, C. Y.; Zhang, D. L.; Xu, J.; Deng, F.; Jing, X. F.; Qiu, S. L.* Gas storage in porous aromatic frameworks (PAFs) *Energy & Environmental Science* **2011**, 4:3991
105.Yu, Z.W.; Zheng, A.M.; Wang, Q.; Chen, L.; Xu, J.; Amoureux, J.P.*; Deng, F.* Insights into the Dealumination of Zeolite HY Revealed by Sensitivity-Enhanced ^{27}Al DQ-MAS NMR Spectroscopy at High Field *Angew. Chem. Int. Ed.* **2010**, 49, 8657–8661.
106.Hou, G. J.; Ding, S. W.*; Zhang, L. M.; Deng, F.* Breaking the T-1 Constraint for Quantitative Measurement in Magic Angle Spinning Solid-State NMR Spectroscopy, *J. Am. Chem. Soc.* **2010**, 132, 5538-5539.
107.Shen, W. L.; Li, S. H.; Xu, J.; Zhang, H. L.; Hu, W.; Zhou, D.; Zhang, J. A.; Yu, J. H.; Xu, W. J.; Xu, Y., Deng F.* A Novel Phase Transformation Phenomenon in Mesostructured Aluminophosphate *J. Phys. Chem. C*, **2010**, 114, 7076-7084.
108.Feng, N.; Zheng, A.M.; Zhang ,H.; Liu, S.B.*; Deng, F.* Combined Solid-State NMR and Theoretical Calculation Studies of Brønsted Acid Properties in Anhydrous 12-Molybdo-phosphoric Acid *J. Phys. Chem. C* **2010**,114:5464–15472.
109.Fang, H.J; Zheng, A.M.*; Xu, J.; Chen, L.; Deng, F.* New Insights into the Effects of Acid Strength on the Solid Acid-Catalyzed Reaction: Theoretical Calculation Study of Olefinic Hydrocarbon Protonation Reaction *J. Phys. Chem. C* **2010**, 114, 10254-10264.
110.Fang, H.J; Zheng, A.M.*; Chu, Y.; Deng, F.* ^{13}C Chemical shift of Adsorbed Acetone for Measuring the Acid Strength of Solid Acids: A Theoretical Calculation Study *J. Phys. Chem. C* **2010**, 114, 12711-12718.
111.Li, S. H.; Zheng, A. M.; Su, Y. C.; Fang, H. J.; Shen, W. L.; Yu, Z. W.; Chen, L.; Deng, F.* Extra-framework aluminium species in hydrated faujasite zeolite as investigated by two-dimensional solid-state NMR spectroscopy and theoretical calculations *Phys. Chem. Chem. Phys.* **2010**, 12, 3895-3903.
112.Chen, L.; Wang, Q.; Hu, B.; Lafon, O.; Deng, F.* Amoureux, J.P.*, Measurement of hetero-nuclear distances using a symmetry-based pulse sequence in solid-state NMR *Phys. Chem. Chem. Phys.* **2010**,12, 9395-9405.
113.Shen, W. L.; Yang, J.; Li, S. H.; Hu, W.; Xu, J.; Zhang, H. L.; Zou, Q.; Chen, L.; Deng, F.* Multinuclear solid-state NMR studies on phase transition of mesostructured aluminophosphate *Micropor. Mesopor. Mater.* **2010,** 127, 73-81.
114.Wang, Q.; Hu, B. W.; Lafon, O.; Trebosc, J.; Deng, F.*; Amoureux, J. P.* Homonuclear dipolar recoupling under ultra-fast magic-angle spinning: Probing F-19-F-19 proximities by solid-state NMR. *J. Magn. Reson.* **2010**, 203 :113-128.
115.Chen L.; Lu X.Y.; Wang Q.A.; Lafon O.; Trebosc J.; Deng F.*; Amoureux JP.* Distance measurement between a spin-1/2 and a half-integer quadrupolar nuclei by solid-state NMR using exact analytical expressions *J. Magn. Reson.* **2010**, 206, 269-273.
116.Shen W.L., Xu W.J., Gao Q., Deng F.* Intactness and spatial proximity of acid-base groups in bifunctional SBA-15 as revealed by solid-state NMR, *Chem. Phys. Lett.* **2010**, 461, 1-3.
117.Wu, J. F.; Wang, W. D.; Xu, J.; Deng, F.; Wang, W.* Reactivity of C-1 Surface Species Formed in Methane Activation on Zn-Modified H-ZSM-5 Zeolite *Chemistry-a European*

Journal **2010**, 16:14016-14025.
118.Zheng, A., Liu, S.-B.*, Deng, F.* ^{13}C shielding tensors of crystalline amino acids and peptides: Theoretical predictions based on periodic structure models *J. Comput. Chem*. **2009**, 30 :222-235.
119.Zheng, A., Liu, S.-B.*, Deng, F.* Chemoselectivity during propene hydrogenation reaction over H-ZSM-5 zeolite: Insights from theoretical calculations *Micropor. Mesopor. Mater.* **2009**,121, 158.
120.Yu, H.; Fang, H.; Zhang, H.; Li, B.; Deng, F.* Acidity of sulfated tin oxide and sulfated zirconia: A view from solid-state NMR spectroscopy *Catal. Commun.* **2009**, 10: :920-924
121.Zheng, A.M.; Liu, S.-B.*; Deng, F.* ^{19}F chemical shift of crystalline metal fluorides: Theoretical predictions based on periodic structure models, *J. Phys. Chem. B*, **2009**, 113: 15018-15023
122.Hu, B., Wang, Q., Lafon, O., Trébosc, J., Deng, F.*, Amoureux, J.P.* Robust and efficient spin-locked symmetry-based double-quantum homonuclear dipolar recoupling for probing ^{1}H-^{1}H proximity in the solid-state *J. Magn. Reson.* **2009**,198: 41-48
123.Wang, Q.; Hu, B.; Lafon, O.; Trébosc, J.; Deng, F.*; Amoureux, J.P.* Double-quantum homonuclear NMR correlation spectroscopy of quadrupolar nuclei subjected to magic-angle spinning and high magnetic field *J. Magn. Reson.* **2009**, 200, 251-260
124.Wang, Q., Hu, B., Fayon, F., Trébosc, J., Legein, C., Lafon, O., Deng, F.*, Amoureux, J.-P.* Double-quantum ^{19}F-^{19}F dipolar recoupling at ultra-fast magic angle spinning NMR: Application to the assignment of ^{19}F NMR spectra of inorganic fluorides *Phys. Chem. Chem. Phys.* **2009**,11, 10391-10395
125. Ben, T.; Ren, H.; Ma, S.Q.; Cao, D. P.; Lan, J. H.; Jing, X .F.; Wang, W. C.; Xu, J.; Deng, F.; Qiu, S.L.*; Zhu, G.S.* *Angew. Chem. Int. Ed.* **2009**, 48, 9457-9460.
126. Zheng, A. M.; Zhang H. L.; Lu, X.; Liu, S. B.*; Deng, F.* Theoretical Predictions of ^{31}P NMR Chemical Shift Threshold of Trimethylphosphine Oxide Adsorbed on Solid Acid Catalysts *J. Phys. Chem. B*, **2008**, 112, 4496-4505.
127. Zhang, H. L.; Zheng, A. M.; Yu, H. G.; Li, S. H.; Lu, X.; Deng, F.* Formation, Location and Photocatalytic Reactivity of Methoxy Species on Keggin 12-$H_3PW_{12}O_{40}$: A Joint Solid-State NMR Spectroscopy and DFT Calculation Study *J. Phys. Chem. C*, **2008**, 112: 15765-15770.
128. Zhang, H. L.; Yu, H. G.; Zheng, A. M.; Li, S. H.; Shen, W. L.; Deng, F.* Reactivity Enhancement of 2-Propanol Photocatalysis on SO42-/TiO2: Insights From Solid-state NMR Spectroscopy *Environ. Sci. Technol.* **2008**, 42:5316-5321
129. Li, S. H.; Huang, S. J.; Shen, W L.; Zhang, H. L.; Fang, H. J.; Zheng, A.M.; Liu, S. B.*; Deng, F.* Probing the Spatial Proximities Among Acid Sites in Dealuminated H-Y Zeolite by Solid-State NMR Spectroscopy *J. Phys. Chem. C*, **2008**, 112: 14486-14494.
130. Zheng, A. M.; Huang, S. J.; Chen, W. H.; Wu, P. H.; Zhang, H. L.; Lee, H. K.; Menorval, L.C.; Deng, F.*; Liu S. B.* ^{31}P Chemical Shift of Adsorbed Trialkylphosphine Oxide for Acidity Characterization of Solid Acids Catalysts *J. Phys. Chem. A*, **2008**, 112, 7337-7356.
131. Jun Xu, Dan Zhou, Xiaowei Song, Lei Chen, Jihong Yu, Chaohui Ye, Feng Deng* Crystallization of magnesium substituted aluminophosphate of type-36 as studied by solid-state NMR spectroscopy *Micropor. Mesopor. Mater.* **2008**, 115: 576-584.

132. Jia, H. M.; Xiao, W. J.; Zhang, L. Z.*; Zheng, Z.; Zhang, H. L.; Deng, F. In situ L-hydroxyproline functionalization and enhanced photocatalytic activity of TiO_2 nanorods *J. Phys. Chem. C* **2008**, 112: 11379-11384.
133. Qiang Gao, Wujun Xu, Yao Xu*, Dong Wu, Yuhan Sun, Feng Deng, Wanling Shen Amnio acid adsorption on mesoporous materials: influence of types of amino acids, modification of mesoporous materials, and solution conditions. *J. Phys. Chem. B* **2008**, 112: 2261-2267.
134. Shenhui Li, Anmin Zheng, Yongchao Su, Hailu Zhang, Lei Chen, Jun Yang, Chaohui Ye, Feng Deng* Bronsted/Lewis acid synergy in dealuminated HY zeolite: a combined solid-state NMR and theoretical calculation study *J. Am. Chem. Soc.* **2007**, 129: 11161-11171.
135. Jun Xu, Lei Chen, Danlin Zeng, Jun Yang, Minjin Zhang, Chaohui Ye, Feng Deng* Crystallization of AlPO-5 aluminophosphate molecular sieve prepared in fluoride medium: a multinuclear solid-state NMR study *J. Phys. Chem. B* **2007**,111: 7105-7113.
136. Zheng, A.M.; Zhang, H.L.; Chen, L.; Yue,Y.; Ye, C. H.; Deng, F.* Relationship between H-1 chemical shifts of deuterated pyridinium ions and Bronsted acid strength of solid acids *J. Phys. Chem. B* **2007**, 111:3085-3089.
137. Yang,Y.X.; Li, C.L.; Nie, X.; Feng, X.S.; Chen, W.X.; Yue,Y.; Tang, H.R.*; Deng, F.* Metabonomic studies of human hepatocellular carcinoma using high-resolution magic-angle spinning H-1 NMR spectroscopy in conjunction with multivariate data analysis *Journal of Proteome Research* **2007**, 6:2605-2614.
138. Zheng, A. M.; Wang, L.; Chen, L.; Yue, Y.; Ye, C. H.; Lu, X.; Deng, F.* High activity of amine-doped H-ZSM-5 zeolite in ethene protonation: Revealed by embedding calculations *Chemphyschem* **2007**, 8, 231-234
139. Zhang, L. M.; Tang, H. R.; Hou, G. J.; Shen, Y. D.; Deng, F.* The domain structure and mobility of semi-crystalline poly(3-hydroxybutyrate) and poly(3-hydroxybutyrateco-3-hydroxyvalerate): A solid-state NMR study *Polymer* **2007**, 48 :2928-2938.
140. Zhang, L. M.; Xu, J.; Hou, G. J.; Tang, H. R.*; Deng, F.* Interactions between Nafion resin and protonated dodecylamine modified montmorillonite: A solid state NMR study *Journal of Colloid and Interface Science* **2007**, 311 :38-44.
141. Zeng, D. L.; Fang, H. J.; Zheng, A. M.; Xu, J.; Chen, L.; Yang, J.; Wang, J. Q.; Ye, C. H.; Deng, F.* Selective oxidation of methanol over supported vanadium oxide catalysts as studied by solid-state NMR spectroscopy *Journal of Molecular Catalysis A-Chemical* **2007**, 270 : 257-263.
142. Zeng, D. L.; Yang, J.; Wang, J. Q.; Xu, J.; Yang, Y. X.; Ye, C. H.; Deng, F.* Solid-state NMR studies of methanol-to-aromatics reaction over silver exchanged HZSM-5 zeolite *Microporous and Mesoporous Materials* **2007**, 98:214-219.
143. Yu, H. G.; Zhang, H. L.; Wang, X. M.; Gu, Z. W.; Li, X. D.; Deng, F.* Local structure of hydroxy-peroxy apatite: A combined XRD, FT-IR, Raman, SEM, and solid-state NMR study *Journal of Physics and Chemistry of Solids* **2007**, 68:1863-1871.
144.Yang, D. J.; Xu, Y.*; Wu, D.; Sun, Y. H.; Zhu, H. Y.; Deng, F. Super hydrophobic mesoporous silica with anchored methyl groups on the surface by a one-step synthesis without surfactant template *J. Phys. Chem. C* **2007**, 111: 999-1004.

145. Guangjin Hou, Feng Deng*, Chaohui Ye, Shangwu Ding* Towards uniform enhancement in solid-state cross polarization magic angle spinning NMR: a scheme incorporating cross-polarization with rotational resonance *J. Chem. Phys.* **2006**, 124: 234512.

146.Guangjin Hou, Feng Deng*, Shangwu Ding*, Riqiang Fu, Jun Yang, Chaohui Ye Quantitative Cross Polarization NMR Spectroscopy in Uniformly ^{13}C-Labeled Solids *Chem. Phys. Lett.* **2006**, 421:356-360.

147. Jun Xu, Anmin Zheng, Jun Yang, Yongchao Su, Jiqing Wang, Danlin Zeng, Mingjin Zhang, Chaohui Ye, Feng Deng* Acidity of Mesoporous MoO_x/ZrO_2 and WO_x/ZrO_2 Materials: A Combined Solid-State NMR and Theoretical Calculation Study *J. Phys. Chem. B* **2006**,110: 10662-10671.

148. Jiqing Wang, Yongchao Su, Jun Xu, Chaohui Ye, Feng Deng* Acid Sites and Oxidation Center in Molybdena Supported on Tin Oxide as Studied by Solid-State NMR Spectroscopy and Theoretical Calculation *Phys. Chem. Chem. Phys.* **2006**, 8: 2378-2384.

149. Xiaoyan Wen, Xuanjun Ai, Jinxiang Dong, Jun Yang, Chaohui Ye, Feng Deng* Reaction of Layered Sodium Disilicate SKS-6 with Calcium Chloride Solution as Revealed by Solid State NMR Spectroscopy: Exploring the Calcium Ion Extracting Mechanism of SKS-6 *Solid State Nucl. Magn. Reson.* **2006**, 30, 89-97.

150. Dan Zhou, Jun Xu, Jihong Yu*, Lei Chen, Feng Deng*, and Ruren Xu Solid-State NMR Spectroscopy of Anionic Framework Aluminophosphates: A New Method to Determine the Al/P Ratio *J. Phys. Chem. B* **2006**,110 : 2131 – 2137

151. Wei Hu, Qing Luo, Yongchao Su, Anmin Zheng, Yong Yue, Chaohui Ye, Feng Deng* Acid sites in mesoporous Al-SBA-15 material as revealed by solid-state NMR spectroscopy *Micropor. Mesopor. Mater.* **2006**, 92: 22-30.

152. Jiqing Wang, Ningya Yu, Anmin Zheng, Jun Yang, Dong Wu, Yuhan Sun, Chaohui Ye, Feng Deng* Mesoporous MSU Materials Functionalized with Sulfonic Group: A Multinuclear NMR and Theoretical Calculation Study *Micropor. Mesopor. Mater.* **2006**, 89: 219-226.

153. Yang, J.*; Janik, M. J.; Ma, D.; Zheng, A.M.; Zhang, M.J.; Neurock, M.*; Davis, R. J.; Ye, C.H.; Deng, F.* Location, Acid Strength and Mobility of the acidic Protons in Keggin 12-$H_3PW_{12}O_{40}$: A Combined Solid-State NMR Spectroscopy and DFT Quantum Chemical Calculation Study *J. Am. Chem. Soc.* **2005**, 127: 18274-18280.

154. Yang, J.; Zheng, A. M.; Zhang, M. J.; Luo, Q.; Yue, Y.; Ye, C. H.; Lu, X.; Deng, F.* Bronsted and lewis acidity of the BF_3/gamma-Al_2O_3 alkylation catalyst as revealed by solid-state NMR spectroscopy and DFT quantum chemical calculations. *J. Phys. Chem. B* **2005**, 109 :13124-13131.

155. Zheng, A.M.; Lei, C.; Yang, Y.; Zhang, M.J.; Su, Y.C.; Yue, Y.; Ye, C.H.; Deng, F.* Combined DFT theoretical calculation and solid state NMR studies of Al substitution and acid sites in zeolite MCM-22 *J. Phys. Chem. B* **2005**,109: 24273.

156. Zheng, A. M.; Chen, L.; Yang, J.; Yue, Y.; Ye, C. H.; Xin, L. B.; Deng, F.* Prediction of the C-13 NMR chemical shifts of organic species adsorbed on H-ZSM-5 zeolite by the ONIOM-GIAO method. *Chem. Commun.* **2005**, 2474-2476.

157. Luo, Q.; Yang, J.; Hu, W.; Zhang, M. J.; Yue, Y.; Ye, C. H.; Deng, F.* Unambiguously distinguishing Si 3Si,1Al and Si 3Si,1OH stuctural units in zeolite by H-1/Si-29/Al-27 triple resonance solid state NMR spectroscopy *Solid State Nuclear Magnetic Resonance* **2005**, 28 : 9-12.

158. Zhou, D.; Chen, L.; Yu, J. H.*; Li, Y.; Yan, W. F.; Deng, F.*; Xu, R. R. Synthesis, crystal structure, and solid-state NMR spectroscopy of a new open-framework aluminophosphate (NH_4)(2)Al-4(PO4)(4)(HPO4)center dot H_2O *Inorganic Chemistry* **2005**, 44 : 4391-4397

159. Fang Chen, Mingjin Zhang, Yu Han, Fengshou Xiao, Yong Yue*, Chaohui Ye, Feng Deng* Characterization of Microporosity in Ordered Mesoporous Material MAS-7 by ^{129}Xe NMR Spectroscopy *J. Phys. Chem. B* **2004**,108:3728-3734.

160. Zhihong Liu, Feng Deng*, Shangwu Ding* Effects of Pulse Strength and Sample Spinning Speed on Spectral Spin Diffusion of Multi-Quantum Coherences of Spin-3/2 Quadrupolar Nuclei *J. Chem. Phys.* **2004**, 120:740-748.

161. Chen, F.; Chen, C. L.; Ding, S. W.*; Yue, Y.; Ye, C. H.; Deng, F.* A new approach to determination of micropore size by Xe-129 NMR spectroscopy. *Chem. Phys. Lett.* **2004**, 383: 309-313.

162. Ai, X. J.; Deng, F.*; Dong, J. X.; Hu, W.; Xu, H.; Ye, C. H. One- and two-dimensional solid-state magic angle spinning NMR studies on the hydration process of layered sodium disilicate SKS-6. *Solid State Nucl. Magn. Reson.* **2004**, 25:216-226.

163. Zheng, A. M.; Yang, M. H.; Yue, Y.; Ye, C. H.; Deng, F.* C-13 NMR shielding tensors of carboxyl carbon in amino acids calculated by ONIOM method *Chem. Phys. Lett.* **2004**, 399 : 172-176

164. Chen, L.; Zhang, M. J.; Yue, Y.; Ye, C. H.; Deng, F.* NMR and theoretical studies of boron-modified mordenite *Micropor. Mesopor. Mater.* **2004**, 76:151-156.

165. Zhuang, J. Q.; Ma, D.*; Yan, Z. M.; Deng, F.; Liu, X. M.; Han, X. W.; Bao, X. H.*; Liu, X. W.; Guo, X. W.; Wang, X. S. Solid-state MAS NMR detection of the oxidation center in TS-1 zeolite by in situ probe reaction *J. Catal.* **2004**, 221:670-673.

166. Zong, X. H.; Zhou, P.*; Shao, Z. Z.; Chen, S. M.; Chen, X.; Hu, B. W.; Deng, F.; Yao, W. H. Effect of pH and copper(II) on the conformation transitions of silk fibroin based on EPR, NMR, and Raman spectroscopy *Biochemistry* **2004**, 43:11932-11941

167. Li, W.; Jin, L.; Zhu, N.Y.; Hou, X.M.; Deng, F.*; Sun, H.Z.* Structure of Colloidal Bismuth Subcitrate in Dilute HCl: Unique Assembly of Bismuth Citrate Dinuclear Units ($[Bi(cit)_2Bi]^{2-}$) *J. Am. Chem. Soc.* **2003**, 125: 12408-12409.

168. Luo, Q. ; Deng, F.*; Yuan, Z.Y.; Yang, J.; Zhang, M.J.; Yue, Y.; Ye, C.H. Using trimethylphosphine as a probe molecule to study the acid sites in Al-MCM-41 materials by solid state NMR spectroscopy *J. Phys. Chem. B*, **2003**,107: 2435-2442.

169. Yang, J.; Zhang, M.J.; Deng, F.*; Luo, Q.; Yi, D.L.; Ye, C.H. Solid State NMR Study of Acid Sites Formed by Adsorption of SO_3 onto γ-Al_2O_3 *Chem. Commun.* **2003**, 884-885.

170. Ai, X. J.; Chen, L.; Dong, J. X.; Ye, C. H.; Deng, F.* Variation of sodium coordination during the hydration processes of layered sodium disilicates as studied by Na-23 MQMAS and H-1 -Na-23 CP/MAS NMR spectroscopy. *J. Mater. Chem.* **2003**, 13: 614-621.
171. Yang, J.; Deng, F.*; Zhang, M. J.; Luo, Q.; Ye, C. H. W/HZSM-5 catalyst for methane dehydroaromatization: a multinuclear MAS NMR study *Journal of Molecular Catalysis A-Chemical* **2003**, 202:239-246.
172.Wang, W. Q.*; Min, W.; Liang, Z.; Wang, L. Y.; Chen, L.; Deng, F. NMR and parity violation: low-temperature dependence in H-1.CRAMPS and C-13 CP/MAS ssNMR spectra of alanine enantiomer *Biophysical Chemistry* **2003**, 103: 289-298.
173. Ai, X.J.; Deng, F.*; Dong, J.X.*; Chen, L.; Ye, C.H. Stability of layered sodium disilicate during hydration process as studied by multinuclear solid-state NMR spectroscopy *J. Phys. Chem. B,* **2002**, 106: 9237-9244.
174. Yang, J.; Ma, D.; Deng, F.*; Luo, Q.; Zhang, M. J.; Bao, X. H. Ye, C. H. Solid state ^{13}C NMR studies of methane dehydroaromatization reaction on Mo/HZSM-5 and W/HZSM-5 catalysts *Chem. Commun.* **2002**, 3046-3047.
175. Chen, L.; Deng, F.*; Ye, C. H. Dealumination of HZSM-5 zeolite by calcination: Al-27 multiple quantum MAS NMR study *Acta Physico-Chimica Sinica* **2002**, 18:786-790.
176. Chen, F.; Deng, F.*; Cheng, M. J.; Yue, Y.*; Ye, C. H.; Bao, X. H. Preferential occupation of xenon in zeolite MCM-22 as revealed by ^{129}Xe NMR spectroscopy *J. Phys. Chem. B*, **2001**, 105:9426-9432.
177. Ma, D.; Deng, F.; Fu, R.Q.; Han, X.W.; Bao, X.H.* MAS NMR Studies on the Dealumination of Zeolite MCM-22 *J. Phys. Chem. B* **2001**,105: 1770-1779.
178.Y. Han, F.S. Xiao*, S. Wu, Y.Y. Sun, X.J. Meng, D.S. Li, S. Lin, F. Deng, X. J. Ai A novel method for incorperation of heteroatoms into the framework of ordered mesoporous silica materials synthesized in strong acidic media *J. Phys. Chem. B,* **2001**, 105:7963.
179. J. F. Haw*, J. B. Nicholas*, W. G. Song, F. Deng, Z. K. Wang, T. Xu, C.S. Heneghan Organic Reaction Centers and Hydrocarbon Synthesis in Zeolites *J. Am. Chem. Soc.*, **2000**, 122: 4763-4775.
180. Zhang, Y.; Deng, F.; Qiu, J. Q.; Ye, C. H. * Spin-locking Mechanism of Spin=3/2 Quadrupolar Nuclei under Magic Angle Spinning *Solid State Nucl. Magn. Reson.* **2000**, 15: 209.
181. Barich, DH; Xu, T; Song, WG; Wang, ZK; Deng, F; Haw, JF* N-alkylnitrilium cations in zeolites: A study using theoretical chemistry and in situ NMR with the pulse-quench reactor *J. Phys. Chem. B,* **1998**, 102: 7163-7168.
182. Deng, F.*; Yue, Y.; Ye, C.H. Observation of Non-framework Al Species in Zeolite Beta by Solid-State NMR Spectroscopy. *J. Phys. Chem. B*, **1998**, 102: 5252-5256.
183. Deng F.*; Yue, Y.; Ye, C.H. $^{1}H/^{27}Al$ TRAPDOR NMR Studies on Al Species in Dealuminated Zeolites. *Solid State Nucl. Magn. Reson.* **1998,** 10:151-160.
184. Deng, F.*; Wang, G.X.; Du, Y.R.; Ye, C.H.; Kong, Y.H.; Li, X.D. ^{1}H MAS and $^{1}H\{^{23}Na\}$ Double Resonance NMR Studies on the Surface Modification of Hydroxyls on γ-Alumina by Sodium *Solid State Nucl. Magn. Reson.* **1997**, 7: 281-290.
185. Deng, F.; Dong, J. X.; Du, Y. R.*; Ye, C. H. Solid-state NMR Studies on $AlPO_4$-5 Molecular Sieve with Al/P > 1 *Acta Physico-Chimica Sinica* **1997**, 13: 780-785.

186. Hu, J. Z.; Zhou, J. Y.; Deng, F.; Feng, H. Q.; Yang, N. H.; Li, L. Y.; Ye, C. H.* High resolution H-1 spectra of powdered solids observed by Hahn echo pulse sequence with magic-angle spinning. *Solid State Nucl. Magn. Reson.* **1996**, 6:85-94.51.
187. Deng, F.*; Yue, Y.; Xiao, T.C.; Du, Y. R.*; Ye, C. H.; An, L. D.; Wang, H. L. Substitution of Aluminum in Aluminophosphate Molecular Sieves by Magnesium: A Combined NMR and XRD Study *J. Phys. Chem.* **1995**, 99: 6029-6035.
188. Deng, F.*; Du, Y. R.*; Ye, C.H.; Wang, J. Z.; Ding, D.T.; Li, H.X. Acid Sites and Hydration Behaviors of Dealuminated Zeolite H-ZSM-5: A High Resolution Solid-state NMR Study. *J. Phys. Chem.* **1995**, 99: 15208-15214.
189. Yue, Y.; Deng, F.; Hu, H. B.; Ye, C. H.* Na-23 NMR studies of doped nasicon systems. *Chem. Phys. Lett.* **1995**, 235: 503-507.
190. Xia, Y. L.; Deng, F.; Ye, C. H.* Off-resonance effects on 2D NMR nutation spectra of I=3/2 quadrupolar nuclei in static samples. *Solid State Nucl. Magn. Reson.* **1995**, 5: 227-232.
191. Deng, F.; Du, Y. R.*; Ye, C.H.; Wang, K.; Chen, T.H.; Ding, D.T.; Wang, J.Z.; Li, H.X. Characterization of Sodium Cations in Zeolite Omega by Solid-State ^{23}Na NMR Spectroscopy. *Appl. Magn. Reson.* **1994**, 6: 537-547.
192. Deng. F.; Du, Y. R.*; Ye, C. H.; Wang, K. X.; Wang, J. Z.; Ding, D. T.; Li, H. X. Solid-State NMR Studies of Dealumination of H-ZSM-5 Zeolite by Calcination *Progress in Natural Science*, **1994**, 4: 817-822
193. Deng, F.; Du, Y.R.*; Ye, C.H.; Kong. Y.H. Adsorption of Na^+ onto γ-Alumina Studied by Solid-State ^{23}Na and ^{27}Al NMR Spectroscopy. *Solid State Nucl. Magn. Reson.* **1993**, 2: 317-324.
194. Deng, F.; Hu, J.Z.; Xiong, J.C.; Du, Y.R.* Solid-State NMR Studies of ^{1}H Spin Diffusion in Adsorbed Organic Molecules. *Solid State Nucl. Magn. Reson.* **1993**, 2:97-104.
195. Yue, Y.; Deng, F.; Hu, H. B.; Ye, C. H*.; Lin, Z. X.; Tian, S. B., P-31 NMR study of the solid-solution system Li1+XT2-XINXP3O12. *Chem. Phys. Lett.* **1993**, 208: 311-314.
196. Deng, F.; Yue, Y.; Du, Y. R. Structure, adsorption behavior and reactivity of catalysts studied by solid-state NMR spectroscopy *In-situ Characterization Techniques for Catalysis,* Edited by Qin Xin, Peking University Press, **1993**, 295-328.
197. Deng, F.; Du, Y. R.*; Wang, K.X.; Wang, J. Z.; Li, H. X. ^{1}H -^{27}Al CP/MAS NMR Studies of Dealuminated H-ZSM-5 Zeolite. *Chin. Chem. Lett.*, **1993**, 4, 453-456.
198. Deng, F.; Li, L. Y.; Sun, H. Z.; Du, Y. R.* ^{1}H MAS NMR studies of H_2S and alcohols adsorbed on charcoal. *Acta Physico-Chimica Sinica* **1990**, 6: 648-650.

Invited Review Articles:

1. Xu, J.; Wang, Q.; Deng, F. Metal Active Sites and Their Catalytic Functions in Zeolites: Insights from Solid-state NMR Spectroscopy *Acc. Chem. Res.* **2019**, DOI:10.1021/ acs.accounts.9b00125

2. Zheng, A.M.; Liu, S.B.; Deng, F. ^{31}P NMR Chemical Shifts of Phosphorus Probes as Reliable and Practical Acidity Scales for Solid and Liquid Catalysts *Chem. Rev.* **2017**, 117: 12475-12531.

3. Li, S.H.; Li, J.; Zheng, A.M. Deng, F. Solid-State NMR Characterization of the Structure and Catalytic Reaction Mechanism of Solid Acid Catalysts *Acta Phys.-Chim. Sin.* **2017**, 33: 270-282.

4. Marchetti, A.; Chen, J.; Pang, Z.F.; Li, S.H.; Ling, D.H.; Deng, F.; Kong, X.Q. Understanding Surface and Interfacial Chemistry in Functional Nanomaterials via Solid-State NMR *Adv. Mater.* **2017**, 1605895

5. Zheng, A.M.; Li, S.H.; Liu, S. B.; Deng, F. Acidic Properties and Structure-activity Correlations of Aolid Acid Catalysts Revealed by Solid-state NMR Spectroscopy *Acc. Chem. Res.* **2016**, 49: 655-663.

6. Li, S.H. ; Zhou, L.; Zheng, A.M.; Deng, F. Recent Advances in Solid-state NMR Characterization of Zeolites *Chin. J. Catal.* **2015**, 36 :789–796.

7. Zheng, A. M., Deng, F., Liu S. B. Acidity Characterization of Solid Acid Catalysts by Solid-State ^{31}P NMR of Adsorbed Phosphorus Containing Probe Molecules *Annual Reports on NMR Spectroscopy*, **2014**, 81: 47-108.

8. Li, S.H.; Deng, F. Recent Advances of Solid-state NMR Studies on Zeolites *Annual Reports on NMR Spectroscopy*, **2013**, 78: 1-45.

9. Zheng, A.M., Liu, S.B., Deng, F. Acidity Characterization of Heterogeneous Catalysts by Solid-state NMR Spectroscopy Using Probe Molecules. *Solid State Nucl. Magn. Reson.* **2013**, 55-56: 12-27.

10. Zheng, A.M., Huang, S.J., Wang, Q., Zhang, H.L., Deng, F., Liu, S.B. Progress in Development and Application of Solid-state NMR for Solid Acid Catalysis. *Chin. J. Catal.* **2013**, 34: 436-491.

11. Zheng, A.M.; Huang, S.J.; Liu, S.B.; Deng, F. Acid Properties of Solid Acid Catalysts Characterized by Solid-state ^{31}P NMR of Adsorbed Phosphorous Probe Molecules *Phys. Chem. Chem. Phys.* **2011**, 13:14889-14901.

12. Yu, Z. W.; Zheng, A. M.; Wang, Q. A.; Deng, F. Application of Two-dimensional Double Quantum Magic Angle Spinning NMR to Solid Functional Materials *Chemical Journal of Chinese Universities-Chinese* **2011**, 32: 471-484.

13. Yu, Z.W.; Zheng, A.M.; Wang, Q.; Huang, S.-J.; Deng, F.; Liu, S.B. Acidity Characterization of Solid Acid Catalysts by Solid-State NMR Spectroscopy: A Review on Recent Progresses. *Chin. J. Magn. Reson.* **2010**, 27: 485-515.

Book

1. Xu, J.; Wang, Q.; Li, S. H.; Deng, F. *Solid-State NMR in Zeolite Catalysis*, Lecture Notes in Chemistry 103, Springer Nature Singapore Pte Ltd. **2019**, page 1-260.

Book Chapter

1. Zheng, A.M.; Li, S.H.; Deng, F. Solid-state NMR Characterization of Acidity of Solid Catalysts *Modern Magnetic Resonance*, Springer, Graham A. Webb (ed.) **2017**, 1-23.
2. Li, S.H.; Deng, F. Solid-State NMR Studies of Zeolites, *Zeolites in Sustainable Chemistry,* Green Chemistry and Sustainable Technology, F.S. Xiao, X. Meng (ed), Springer-Verlag Berlin Heidelberg **2015**, page 231-268.
3. Deng, F.; Yang, J.; Ye, C.H. Solid-state NMR characterization of solid surface of heterogeneous catalysts *Modern Magnetic Resonance*, Graham A. Webb (ed.) **2005**, 205-211.

Selected Presentations:

1. ^{1}H spin diffusion of organic molecules adsorbed on porous solids, Oral presentation, Proceedings of International 4th Beijing Conference and Exhibition on Instrumental Analysis, October 18-24, **1991**, Beijing, China
2. Adsorption of Na^{+} to γ-alumina studied by ^{23}Na and ^{27}Al solid-state NMR spectroscopy, Oral presentation, Proceedings of International 5th Beijing Conference and Exhibition on Instrumental Analysis, October 9-12, **1993**, Beijing, China
3. ^{1}H MAS and $^{1}H\{^{23}Na\}$ double resonance NMR studies on the modification of surface hydroxyls of γ-alumina by sodium, Plenary lecture, the 9th Chinese National Magnetic Resonance Conferenece, September, 15-19, **1996**, Chengde, China
4. Solid-state NMR studies of molecular sieves and catalytic reactions, Invited lecture, Proceedings of International 8th Beijing Conference and Exhibition on Instrumental Analysis, October 25-28, **1999**, Beijing, China
5. Solid-state NMR studies of zeolite catalysts, Invited lecture for Wang T. C. Award for Magnetic Resonance Spectroscopy, the 11th Chinese National Magnetic Resonance Conferenece, October15-18, **2000**, Nanjing, China
6. Using trimethylphosphine as a probe molecule to study the acid sites in Al-MCM-41materials by solid-state NMR spectroscopy, Oral presentation, International Symposium on Solid State Chemistry in China, August 9-12, **2002**, Changchun, China
7. Solid-state NMR studies of ordered mesoporous materials. Oral presentation, Proceedings of International 10th Beijing Conference and Exhibition on Instrumental Analysis, October 13-16, **2003**, Beijing, China
8. Surface acidity of BF_3/Al_2O_3 catalyst as studied by solid-state NMR and theoretical calculation. Invited lecture, the 1st Asia-Pacific NMR Symposium, November 9-11, **2005**, Yokohama, Japan
9. Solid-state NMR spectroscopy and its application to heterogeneous catalysts, Invited lecture, the 1st Sino-French Workshop on Solid-state NMR Spectroscopy, October 17-21, **2006**, Wuhan, China
10. Solid-state NMR studies on solid acid catalysts, Plenary lecture, the 14th Chinese National Magnetic Resonance Conferenece, October 11-13, **2006**, Xi'an, China.
11. A Combined Solid-State NMR Spectroscopy and Theoretical Calculation Study of Bronsted/Lewis Acid Synergy in Dealuminated Y Zeolite. Invited lecture, the 16th ISMAR

(International Society for Magnetic Resonance) Conference, October 14-19, **2007**, Kenting, Taiwan, China

12.Two-dimensional ^{1}H-^{1}H Double-quantum Magic Angle Spinning NMR Studies of Bronsted/Lewis Acid Synergy in zeolites. Invited lecture, the 1st Cross-Strait Magnetic Resonance Symposium, Oct.10 - 12, **2007**, Taibei, China.

13. Solid-state NMR spectroscopy: principle and application. Invited lecture, Advanced Class of Modern Characterization Techniques for Catalysis, October 26-30, **2007**, Dalian, China.

14. Solid-state NMR spectroscopy. Invited lecture, Bruker Workshop on Solid-state NMR spectroscopy, April 4-6, **2008**, Beijing, China.

15. Brønsted/Lewis Acid Synergy in Microporous Zeolites Studied by Solid-State NMR Spectroscopy and Theoretical Calculation. Invited lecture, the 13th Asian Chemical Conference, September 14-16, **2009**, Shanghai, China.

16. Solid-state NMR studies of spatial proximity between different acid sites in zeolites, Keynote lecture, the 15th Chinese National Conference on Zeolites, October 12-15, **2009**, Luoyang, China

17. Spatial Proximity of Acid Sites in Microporous Zeolites as Studied by ^{1}H-^{1}H and ^{27}Al-^{27}Al DQ MAS Solid-state NMR Spectroscopy. Invited lecture, Joint EUROMAR **2010** and 17th ISMAR (International Society for Magnetic Resonance) conference, July 4-9, **2010**, Florence, Italy.

18. Surface acidity of solid acid catalysts studied by solid-state NMR spectroscopy and theoretical DFT calculations. Invited lecture, the 240th ACS National Meeting, August 22-27, **2010**, Boston, USA.

19. Solid-state NMR characterization of heterogeneous catalysts. Invited lecture, the 2nd Sino-French Workshop on Solid-state NMR Spectroscopy, November 1-3, **2010**, Wuhan, China

20. Two-dimensional ^{1}H-^{1}H and ^{27}Al-^{27}Al DQ MAS Solid-state NMR Studies of Spatial Proximity of Acid Sites in Zeolites. Invited lecture, the 4th Asia-Pacific NMR Symposium, October 16-19, **2011**, Beijing, China

21. Solid-state NMR and DFT calculation studies of zeolites. Keynote lecture, the 16th Chinese National Conference on Zeolites, October 14-17, **2011**, Beijing, China

22. Bronsted/Lewis Acid Synergy in Zeolites Studied by Two-dimensional ^{1}H-^{1}H and ^{27}Al-^{27}Al DQ MAS Solid-state NMR Spectroscopy. Invited lecture, Frontiers Seminar Series, Pacific Northwest National Laboratory, April 23, **2011**, Richland, Washington, USA.

23. Solid-state NMR Studies of Heterogeneous Catalysts, Invited lecture, the 6th Pacific Basin Conference on Adsorption Science and Technology, May 20-23, **2012**, Taibai, China.

24. Two-dimensional ^{1}H-^{1}H and ^{27}Al-^{27}Al DQ MAS Solid-state NMR Studies of Zeolites, Invited lecture, the 41th Korean Magnetic Resonance Society Conference, June 28-30, **2012**, Jeju Island, Korea.

25. Methane activation and conversion over Zn modified ZSM-5 Zeolites studied by Solid-state NMR spectroscopy and DFT Calculation. Invited lecture, the 6th Asia-Pacific Congress on Catalysis, October 14-17, **2013**, Taibei, China.

26. Solid-state NMR studies of heterogeneous catalysts and catalytic reactions. Invited lecture, the 3nd Sino-French Workshop on Solid-state NMR Spectroscopy, May 9-11, **2013**, Dalian, China

27. Solid acid catalysts and catalytic reactions studied by solid-state NMR and DFT calculations. Keynote lecture, the 17th Chinese National Conference on Zeolites, Aug 29- Sept 2, **2013**, Yinchuan, China.

28. Solid-state NMR and theoretical DFT calculation studies on solid acid catalysts and related catalytic reactions. Invited lecture, the 55th ENC (Experimental Nuclear Magnetic Resonance Conference), March 23-28, **2014**, Boston, USA.

29. Solid-state NMR and theoretical DFT calculation studies on solid acid catalysts and related catalytic reactions. Invited lecture, the 29th National Conference of Chinese Chemical Society (porous functional materials section), August 4-7, **2014**, Beijing, China

30. Solid acid catalysts and related catalytic reactions studied by solid-state NMR spectroscopy and DFT calculations. Keynote lecture, the 17th Chinese National Conference on Catalysis, October 13-17, **2014**, Hanzhou, China

31. Solid-state NMR and theoretical DFT calculation studies on solid acid catalysts and catalytic reactions. Plenary lecture, 18th Chinese National Conference on Zeolites, October 25-28, **2015**, Shanghai, China.

32. Solid-state NMR studies on methane activation and conversion over Zn-modified ZSM-5 Zeolites. Invited lecture, the 19th ISMAR (International Society for Magnetic Resonance) Conference, August 16-21, **2015**, Shanghai, China.

33. Methane and CO activation and conversion over Zn-modified ZSM-5 zeolites studied by solid-state NMR and ESR specstroscopy, Invited lecture, the 16th International Congress on Catalysis, July 3-8, **2016**, Beijing, China

34. Solid-state NMR studies of solid acid catalysts and related catalytic reactions. Invited lecture, 2016 Lanzhou International Workshop on Solid-state Nuclear Magnetic Resonance, August 19-21, **2016**, Lanzhou, China

35. Solid-state NMR studies of zeolite catalysis. Invited lecture, the 7th Cross-Strait Magnetic Resonance Symposium, Oct.30 - Nov. 1, **2018**, Taibei, China.