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研究領域：固態相變化、礦物學

Specialty: Experimental Mineralogy

〔 學 歷 〕

- Ph.D. : Inst. Materials Sciences and Engineering, Nat'l Sun Yat-Sen Univ., 1993
- M.S. : Inst. Applied Chemistry, Nat'l Chiao Tung Univ., 1985
- B.S. : Dept. Applied Chemistry, Nat'l Chen Kung Univ., 1981

〔 經 歷 〕

- 2001/08 – 2016/01: 中央研究院 地球科學所 副研究員
Associate Research Fellow, Inst. Earth Sciences, Academia Sinica
- 1997/12 - 2001/08 : 中央研究院 地球科學所 助研究員
Assistant Research Fellow, Inst. Earth Sciences, Academia Sinica
- 1994/08 - 1997/12 : 中央研究院 地球科學所 博士後研究
Postdoctoral Fellow, Inst. Earth Sciences, Academia Sinica
- 1993/10 - 1994/07 : 中山大學 材料所 博士後研究
Postdoctoral, Inst. Materials Science and Engineering, Nat'l Sun Yat-Sen Univ.
- 1993/10 - 1994/07 : 中山科學研究院 第四研究所 助理研究員
Assistant Scientist, Chemical Systems Research Division, Chung Shan Inst. Science and Technology

〔 著 作 〕

Research highlight

1. Phase transformations and compressional behavior of minerals
2. Elastic properties of minerals and volcanic glasses

Publication list

(A) SCI paper

1. T. Y. Tseng, C. C. Lin, and J. T. Liaw (1987) Phase transformations of sol-gel derived magnesia partially stabilized zirconias. *J. Mater. Sci.* **22**, 965-972.
2. C. C. Lin and P. Shen (1993) Directional dissolution kinetics of willemite. *Geochim. Cosmochim. Acta* **57**, 27-36.
3. C. C. Lin and P. Shen (1993) Role of screw axes in dissolution of willemite. *Geochim. Cosmochim. Acta* **57**, 1649-1655.
4. H. Y. Chang, C. C. Lin, P. Shen, A. C. Su, and C. C. Lee (1993) Dissolution of willemite polycrystals: Effects of pH, temperature and TiO₂ solid solution. *J. Mater. Sci.* **28**, 1781-1787.

5. C. C. Lin and P. Shen (1994) Sol-gel synthesis of zinc orthosilicate. *J. Non-Cryst. Solids* **171**, 281-289.
6. C. C. Lin and P. Shen (1994) The role of Ti⁴⁺ on the structure and transformations of gel-produced Zn₂SiO₄. *J. Solid State Chem.* **112**, 381-386.
7. C. C. Lin and P. Shen (1994) Non-isothermal site saturation during transformations of Zn₂SiO₄. *J. Solid State Chem.* **112**, 387-391.
8. C. C. Lin and P. Shen (1994) Dissolution kinetics of Zn₂SiO₄ powders: Effects of polymorphs, temperature, particle size and Fe²⁺ presence. *Geochim. Cosmochim. Acta* **58**, 3583-3593.
9. C. C. Lin and P. Shen (1995) Incubation time of pit etching at dislocation outcrop. *Geochim. Cosmochim. Acta* **59**, 2955-2963.
10. L. Liu and C. C. Lin (1995) High-pressure phase transformations of the carbonates in the system CaO-MgO-SiO₂-CO₂. *Earth Planet. Sci. Lett.* **134**, 297-305.
11. H. F. Wu, C. C. Lin, and P. Shen (1997) Structure and dissolution of CaO-ZrO₂-TiO₂-Al₂O₃-B₂O₃-SiO₂ glass (II). *J. Non-Cryst. Solids* **209**, 76-86.
12. C. C. Lin and L. Liu (1997) High-pressure phase transformations in aragonite-type carbonates. *Phys. Chem. Minerals* **24**, 149-157.
13. L. Liu and C. C. Lin (1997) A calcite @ aragonite type phase transition in CdCO₃. *Am. Mineral.* **82**, 643-646.
14. C. C. Lin and L. Liu (1997) Post-aragonite phase transitions in strontianite and cerussite: A high-pressure Raman spectroscopic study. *J. Phys. Chem. Solids* **58**, 977-987.
15. C.C. Lin and L. Liu (1997) High-pressure Raman spectroscopic study of post-aragonite phase transition in witherite (BaCO₃). *Eur. J. Mineral.* **9**, 785-792.
16. L. Liu, C. C. Lin, T. P. Mernagh, and T. Irifune (1997) Raman spectra of phase A at various pressures and temperatures. *J. Phys. Chem. Solids* **58**, 2023-2030.
17. Lin-gun Liu, T. P. Mernagh, C.C. Lin, and T. Irifune (1997) Raman spectra of phase E at various pressures and temperatures with geophysical implications. *Earth Planet. Sci. Lett.* **149**, 57-65.
18. L. Liu, C. C. Lin, T. P. Mernagh, and T. Irifune (1998) Raman spectra of phase B at various pressures and temperatures. *J. Phys. Chem. Solids* **59**, 871-877.
19. L. Liu, C. C. Lin, T. Irifune, and T. P. Mernagh (1998) Raman study of phase D at various pressures and temperatures. *Geophys. Res. Letters* **25**, 3453-3456.
20. C. C. Lin, L. Liu, and T. Irifune (1999) High-pressure Raman spectroscopic study of chondrodite. *Phys. Chem. Minerals* **26**, 226-233.
21. L. Liu, C. C. Lin, and T. P. Mernagh (1999) Raman spectra of norbergite at various pressures and temperatures. *Eur. J. Mineral.* **11**, 1011-1021.
22. T. P. Mernagh, L. Liu, and C. C. Lin (1999) Raman spectra of chondrodite at various temperatures. *J. Raman Spectrosc.* **30**, 963-969.
23. C. C. Lin, L. Liu, T. P. Mernagh and T. Irifune (2000) Raman spectroscopic study of hydroxyl-clinohumite at various pressures and temperatures. *Phys. Chem. Minerals* **27**, 320-331.
24. C. C. Lin (2001) Vibrational spectroscopic study of the system a-Co₂SiO₄ – a-Ni₂SiO₄. *J. Solid State Chem.* **157**, 102-109.
25. C. C. Lin (2001) High-pressure Raman spectroscopic study of Co- and Ni-olivines. *Phys. Chem. Minerals* **28**, 249-257.
26. C. C. Chen, L.-g. Liu, C. C. Lin, and Y.-j. Yang (2001) High-pressure phase transformation in CaSO₄. *J. Phys. Chem. Solids* **62**, 1293-1298.
27. L. Liu, C. C. Lin, and Y-J. Yang (2001) Formation of diamond by decarbonation of MnCO₃. *Solid State Commun.* **118**, 195-198.

28. S. L. Hwang, P. Shen, H. T. Chu, T. F. Yui, and C. C. Lin (2001) Genesis of microdiamonds from melt and associated multiphase inclusions in garnet of ultrahigh-pressure gneiss from Erzgebirge, Germany. *Earth Planet. Sci. Lett.* **188**, 9-15.
29. C-C. Chen, C. C. Lin, L. G. Liu, S. V. Sinogeikin, and J. D. Bass (2001) Elasticity of single-crystal calcite and rhodochrosite by Brillouin spectroscopy. *Am. Mineral.* **86**, 1525-1529.
30. L. Liu, C. C. Lin, T. P. Mernagh and T. Inoue (2002) Raman spectra of hydrous Mg_2SiO_4 at various pressures and temperatures. *Phys. Chem. Minerals* **29**, 181-187.
31. L. Liu, C.C. Lin, T. P. Mernagh, and T. Inoue (2002) Raman spectra of phase C at various pressures and temperatures. *Eur. J. Mineral.* **14**, 15-23.
32. P. T. Chao, P. Shen, and C. C. Lin (2002) Thermal cycle etching of willemite (0001): effects of surface premelting, dislocation outcrops and polygonization. *Mater. Sci. Eng.* **A335**, 191-197.
33. C. C. Lin (2003) Pressure-induced metastable phase transition in orthoenstatite (MgSiO_3) at room temperature: a Raman spectroscopic study. *J. Solid State Chem.* **174**, 403-411.
34. C. C. Lin (2004) Pressure-induced polymorphism in enstatite (MgSiO_3) at room temperature: clinoenstatite and orthoenstatite. *J. Phys. Chem. Solids* **65**, 913-921.
35. L-g. Liu, K. Okamoto, Y.-j. Yang, C.-c. Chen, and C. C. Lin (2004) Elasticity of single-crystal phase D (a dense hydrous magnesium silicate) by Brillouin spectroscopy. *Solid State Commun.* **132**, 517-520.
36. C-M Lin, J-L Chao, and C. C. Lin (2005) Metastable phase transition of orthoenstatite (MgSiO_3) under high pressure. *Solid State Sci.* **7**, 293-297.
37. L-g. Liu, C.-c. Chen, C.C. Lin, and Y.-j. Yang (2005) Elasticity of single-crystal aragonite by Brillouin spectroscopy. *Phys. Chem. Minerals* **32**, 97-102.
38. C. C. Lin, L.-C. Huang, and P. Shen (2005) $\text{Na}_2\text{CaSi}_2\text{O}_6\text{-P}_2\text{O}_5$ based bioactive glasses: I. Elasticity and structure. *J. Non-Cryst. Solids* **351**, 3195-3203.
39. W.-j. Tseng, C. C. Lin, P. Shen, and P.-w. Shen (2006) Directional acidic dissolution kinetics of (OH,F,Cl)-bearing apatite. *J. Biomed. Mater. Res.* **76A**, 753-764.
40. C. C. Lin and L. G. Liu (2006) Composition dependence of elasticity in aluminosilicate glasses. *Phys. Chem. Minerals*, **33**, 332-346 .
41. C. C. Lin, P. Shen, H. M. Chang, and Y. J. Yang (2006) Composition dependent structure and elasticity of lithium silicate glasses: Effect of ZrO_2 additive and the combination of alkali silicate glasses. *J. Eur. Ceram. Soc.* , **26**, 3613-3620.
42. L.-C. Huang, C. C. Lin, and P. Shen (2007) Crystallization and stoichiometry of crystals in $\text{Na}_2\text{CaSi}_2\text{O}_6\text{-P}_2\text{O}_5$ based bioactive glasses. *Mater. Sci. Eng. A*, **452/453**, 326-333.
43. Lin, C.-C. , S.-F. Chen, L. Liu and C.-C. Li (2007) Anionic structure and elasticity of $\text{Na}_2\text{O-MgO-SiO}_2$ glasses, *J. Non-Cryst. Solids*, **353**, 413-425.
44. L. Liu, C.C. Lin, Y. J. Yang, T. P. Mernagh, and T. Irifune (2009) Raman spectroscopic study of K-lingunite at various pressures and temperatures. *Phys. Chem. Minerals* **36**, 143-149.
45. C. C. Lin, S.-F. Chen , L.-g. Liu, and C.-C. Li (2010) Size effects of modifying cations on the structure and elastic properties of $\text{Na}_2\text{O-MO-SiO}_2$ glasses (M=Mg, Ca, Sr, Ba). *Mater. Chem. Phys.*, **123**, 569-580.
46. C. C. Lin, and C.-c. Chen (2011) Elasticity of tephroite ($\alpha\text{-Mn}_2\text{SiO}_4$) and a comparison of the elastic properties of silicate olivines. *Eur. J. Minerals* **23**, 35-43.
47. S. Zhai, W. Xue, C. C. Lin, X. Wu, and E. Ito (2011) Raman spectra and X-ray diffraction of tuite at various temperatures. *Phys. Chem. Minerals*, **38**, 639-646.
48. C. C. Lin, S.F. Chen, K. S. Leung, and P. Shen (2012) Effects of $\text{CaO/P}_2\text{O}_5$ ratio on the structure and elastic properties of $\text{SiO}_2\text{-CaO-Na}_2\text{O-P}_2\text{O}_5$ bioglasses. *Journal of Materials Science-Materials in Medicine*, **23**, 245-258, DOI 10.1007/s10856-011-4504-3.

49. J.C. Tang, B. Civalleri, C. C. Lin, L. Valenzano, R. Galvelis, P.-F. Chen, T. D. Bennett, C. Mellot-Draznieks, C. M. Zicovich-Wilson, and A. K. Cheetham (2012) Exceptionally low shear modulus in a prototypical imidazole-based metal-organic framework. *Phys. Rev. Lett.* 108, 095502.
50. C. C. Lin (2013) Elasticity of calcite: thermal evolution. *Phys. Chem. Minerals* 40, 157-166.
51. S. Zhai, C. C. Lin, and W. Xue (2014) Raman spectra of Sr₃(PO₄)₂ and Ba₃(PO₄)₂ orthophosphates at various temperatures. *Vib. Spectrosc.* 70, 6-11.
52. C.C. Lin, K. S. Leung, P. Shen, S.-F. Chen (2015) Elasticity and structure of the compounds in the wollastonite (CaSiO₃)-Na₂SiO₃ system: from amorphous to crystalline state. *J. Mater. Sci. Mater. Med.* 26, 39.

(B) Others

1. C. C. Lin, C. Sun, H. Y. Chang, P. Shen, and A. C. Su (1992) Dissolution behavior of willemite-bearing glaze and glass-ceramics. In *The Physics of Non-Crystalline Solids* (eds. L. D. Pye, W. C. L. Course and H. J. Stevens) pp. 706-710. Taylor and Francis, London.
2. L. Liu, T. P. Mernagh, C. C. Lin, J. A. Xu, and T. Inoue (1998) Raman spectra of hydrous b -Mg₂SiO₄ at various pressures and temperatures. In *High Pressure-temperature Research: Properties of Earth and Planetary Materials*. (eds. M. H. Manghnani and Y. Syono) pp.523-530. Am. Geophys. Union, Washington DC.