A. STATISTICS

1. Name: Yuch-Ning Shieh
2. Address: 4047 Ridgefield Court
   West Lafayette, IN 47906
3. Date of Birth: February 15, 1940
4. Place of Birth: Taiwan
5. Marital Status: Married, two children

B. GENERAL INFORMATION

1. Education

   National Taiwan University, 1958-1962, B.S. (1962) Geology.
   California Inst. of Technology, 1963-1968, Ph.D. (1969) Geochemistry

2. Professional Experience

1987-Present	Professor, Department of Earth, Atmospheric, and planetary Sciences, Purdue University
l986-Present	Corresponding Research Fellow, Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan
1996-Present	Visiting Professor, Department of Earth Sciences, Zhejiang University, Hangzhou, China
1998, 2006	Visiting Professor, Dept. of Geology, National Taiwan University
1988-1993	Visiting Professor, Institute of Geochemistry, Chinese Academy of Sciences
1989	Visiting Research Professor, Institute of Earth Sciences, Academia Sinica, Taipei
l979-87	Associate Professor, Department of Earth and Atmospheric Sciences, Purdue University
1981	Visiting scientist, Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan
l978-8l	Guest Investigator, Geophysical Laboratory, Carnegie Institution of Washington, Washington, D.C.
1972-79	Assistant Professor, Department of Earth and Atmospheric Sciences, Purdue University
l972 Summer	Visiting Assistant Professor, National Taiwan University
l968-l972	Postdoctoral Research Fellow, McMaster University

3. Awards, Honors, and Appontments

Editorial Board Member, Chemical Geology (Isotope Geoscience Section)
Member, working group on water-rock interaction in the metamorphic environment, International Association of Geochemistry and Cosmochemistry
Member, Geochemical Interaction Committee, Illinois Superdeep Drillhole Project
Member, Advisory Board, Institute of Earth Sciences, Academia Sinica, Taipei
American Men and Women of Science
Who's Who in Frontier Science and Technology

4. Memberships in Professional Societies

Geochemical Society
American Geophysical Union
International Association of Geochemistry & Cosmochemistry (IAGC)
Geological Society of China

C. TEACHING

1. Courses Taught During the Past Years

GEOS 111	Physical Geology
GEOS 244	Petrology
GEOS 490	Field Geology in the Rocky Mountains
GEOS 445	Igneous and Metamorphic Petrology (new course developed with Professor Meyer)
GEOS 493	Geosciences Honors Tutorial
GEOS 541	Advanced Metamorphic Petrology (new course developed by Shieh)
GEOS 343	Optical Mineralogy
GEOS 549	Isotope Geology (new coursed developed by Shieh)
GEOS 591	Advanced Topics in Geosciences
GEOS 641	Advanced Topics in Mineralogy and Petrology (new course developed with Professors Meyer and McCallister)
GEOS 450	Physics and Chemistry of the Solid Earth (new course developed with Professors Hinze, Braile, and Meyer)
GEOS 497	Geosciences Honors Research
GEOS 191T	The Geosciences Today (Guest Lecturer)

2. Courses Taught in 2013

Semester	Course Number	Course Title	Credits	Enrollment
Spring	EAS 244	Earth Materials II	4	3
Spring	EAS 244L	Earth Materials II Lab	-	3
Spring	EAS 191	Isotope Hydrogeology	3	1
Summer	EAS 111	Physical Geology	3	13

Fall	EAS 243	Earth Materials I	4	22
Fall	EAS 243L	Earth Materials I Lab	-	22

Note: I taught both lecture (3 hours/week) and lab (3 hours/week) in EAS 243 and EAS 244. I continue to revise and modify the lectures and lab course materials to suit the needs of students with very diffent backgrounds and interests. Although the majority of students are from EAPS, some of them may come from materials engineering,, physics, chemistry, agronomy, and landscape architech. The labs in EAS 243 involved mainly one-on-one instructions to students on symmetry elements and operations in crystal models, and the optical properties of common rock forming minerals using the polarizing microscope. In the last five weeks, an introduction to the common igneous, sedimentary, and metamorphic rocks were taught. In EAS 244, the labs involved mostly with the systematic examination of rocks using both hand specimen and thin sections. In the last five weeks of the semester, a project related to contact metamorphism in Nevada was assigned to students. The students were required to turn in a report including the petrographic description and interpretation of the rocks they examined, and their relation to geologic history.

3. Graduate Students Supervised (as Major Professor)

F.T. Price (Ph.D., Sept. 1977)
J.J. Lee (1976-1977)
J.B. Chu (M.S., May 1980)
J.P. Dugan (1979-1981)
R.D. Lewis (Ph.D., May 1984)
S.J. Kim (Ph.D., Dec. 1989)
X.M. Zhang (1986-1989)
H.Harmon (M.S., Aug. 1990)
Y. Xu (M.S., May, 1992)
T.H. Kim (1994-1995)

Ying Wang (M.S., May 2006)

4. Undergraduate Honors Program (Research Supervisor)

T.G. Suter (Honors B.S., May 1977)

5. Students' Theses

T.G. Suter: "Carbon and Oxygen Isotopes for Calcite in Indiana Coal", B.S. Honors Research, 1977.
F.T. Price: "A Sulfur Isotope Study of Illinois Basin Coals", Ph.D. Thesis, 1977.
J.B. Chu: "Oxygen and Carbon Isotopes and Mineral Chemistry of Metamorphic Rocks from the Nanao District, Eastern Taiwan", M.S. Thesis, 1980.
R.D. Lewis: "Geochemical Investigations of the Yellow Pine, Idaho and Republic, Washington Mining Districts", Ph.D. Thesis, 1984.
S.J. Kim: "Oxygen and Sulfur Isotope Studies of the Wolf River Batholith in Wisconsin and Related Precambrian Anorogenic Granitic Rocks in the Midcontinent of North America", Ph.D. Thesis, 1989.
H. Harmon: "Characterization of Minor Elements in Coals from the Danville and Hymera Seams in Southern Indiana", M.S. Thesis, 1990.
Y. Xu: "Magnetically recoverable rare-metal-rich rutile and monazite in ore and tailings of the Climax and Henderson molybdenum mines, Colorado", M.S. Thesis, 1992.

6. Students to whom I did not serve as major professor, but whose theses contained experimental work performed in the isotope laboratory under my supervision

N.Z. Boctor: "The Mercury-Selenium-Sulfur System and its Geological Implications", Ph.D. Thesis, 1976.
D. VonBargen: "Geology, Geochemistry and Mineralogy of Box Butte County, Nebraska", M.S. Thesis, 1977.
H.M. Tsai: "Mineralogical and Geochemical Investigations of Mineral Inclusions in Diamond, Kimberlite and Associated Rocks", Ph.D. Thesis, 1978.
C.B. Brewster: "A Preliminary Investigation of the Amphibolites and their Possible Protoliths, Carter Creek Area, Ruby Mountains, Montana", M.S. Research Project Report, 1981.

7. Students from other universities whose thesis work includes isotope analyses performed in the isotope laboratory at Purdue

A.E. Lalonde: "The Baie-des-Moutons Syenitic Complex La tabatiere, Quebec", M.Sc. Thesis, McGill University, Canada, 1981.
L.M. Heaman: "Rb-Sr Geochronology and Sr Isotope Systematics of Some Major Lithologies in Chandos Twp., Ontario", M.Sc. Thesis, McMaster University, Canada, 1980.

8. Research Associates

T.C. Huang - Mining Research and Service Organization, Taiwan, May-Aug. 1979.
G.X. Zhang - Institute of Geochemistry, Academia Sinica, Guiyang, China, June 1985-Dec. 1986.
E.D. Young - University of Southern California, Aug. 1990-May 1991.
A. Bechtel - University of Bonn, Germany, Jan.-Feb., 1994.
J.F. Chen - University of Science and Technology of China, Feb.-May, 1994.
S.F. Yang - Zhejiang University, Hanzhou, China, Feb.-May, 1995.
Y.G. Chen - National Taiwan University, Feb. 1995-Jan. 1996.
A. Bechtel - University of Bonn, Germany, Oct.-Nov. 1997.

D. RESEARCH

I. Previous and Current Research

1963-68	Graduate Research Assistant, Division of Geological Sciences, California Institute of Technology, Pasadena, CA Supervisor: Professor H.P. Taylor, Jr. Ph.D Thesis Topic: Oxygen, carbon, and hydrogen isotope studies of contact metamorphism.
1968-72	Post-doctoral Research Fellow, Department of Geology, McMaster University, Hamilton, Ontario, Canada Collaborators: Professors H.P. Schwarcz and D.M. Shaw

1. Establishment of an isotope laboratory for oxygen isotope analysis in silicates and oxides; this lab was the first of its kind built in Canada.

2. Oxygen and carbon isotope studies of some Grenville skarns.

3. Oxygen isotope studies of granitic rocks from the Grenville province.

4. Oxygen isotope studies of the Apsley gneiss, Ontario.

5. Oxygen isotope studies of the surface crystalline rocks of the Canadian shield.

1972-present	Assistant, Associate, and Full Professor, Department of Earth & Atmospheric Sciences, Purdue University

1. Establishment of a stable isotope laboratory in the Department of Geosciences: this project involved the installation of an isotope ratio mass spectrometer and the construction of several high vacuum lines for quantitative extraction of specific chemical elements from geologic materials for isotope abundance determination. This laboratory was completed in 1976 and is now in routine operation in connection with research and teaching. The present capability of this laboratory includes the analysis of S^{34}/S^{32} ratio in coals, ores, and rocks; C^{13}/C^{12} and O^{18}/O^{16} ratios in carbonates, organic matter, and water; and O^{18}/O^{16} ratio in silicates and oxides. Several students have used or are using this laboratory for their thesis research (see above). Part of the costs for the construction of the sample preparation lines was supported by NSF grant EAR-75-19999.

2. Oxygen isotope studies of igneous and metamorphic rocks from the Grenville Province (supported by NSF Grant EAR 75-19999 and EAR 78-13394).

3. Geological and geochemical investigations, including stable isotopes and mineral chemistry, of Cenozoic igneous rocks and associated ore deposits in Taiwan (with Professor Meyer, support by NSF Grant INT 77-12165 under the United States-Republic of China Cooperative Science Program).

4. Oxygen and carbon isotope studies of authigenic kaolinite and calcite in coal.

5. Sulfur isotope studies of coals (with graduate student F.T. Price, supported by NSF energy traineeship).

6. Stable isotope study of Norwegian ores and associated metamorphic rocks (with Professor Rui and Professor Bugge of University of Oslo and Professor Kullerud).

7. Oxygen isotope study of clay minerals of hydrothermal and weathering origin from Yugoslavia (with Professor Maksimovic of the University of Belgrade).

8. Carbon isotope studies of natural and synthetic diamonds (with Professor Meyer).

9. Stable isotope studies of active geothermal system in Taiwan (with Dr. K.K. Liu and Dr. T.F. Yu of the Institute of Earth Sciences, Academia Sinica).

10. Oxygen isotope study of Precambrian basement rocks from the midcontinent region of North America (supported by David Ross Grants).

11. The spilitization of Tertiary basaltic rocks in Taiwan - petrological and stable isotope studies (with Prof. H.I. Yang, Cheng-Kung University and Dr. K.K. Liu, Academia Sinica).

12. Geochemical and isotopic studies of volcanic and sedimentary rocks from the Kaapvaal Basin, South Africa (supported by NSF Grant EAR-8517203).

13. Geochemical and isotopic studies of island arc volcanic rocks in southeast Asia (with C.H. Chen and T. Lee of Institute of Earth Sciences, Academia Sinica).

14. Stable isotope studies of tungsten ore deposits and granitoids in southeast China (with G.X. Zhang of Institute of Geochemistry, Academia Sinica, Guiyang).

15. Geochemical and isotopic studies of biogenic Pb-Zn deposits (with A. Bechtel, University of Bonn, Germany).

16. Sulfur isotope geochemistry in the salt marsh ecosystem (with Y-P. Hsieh, Florida A&M University and Y.G. Chen, National Taiwan University).

II. Field Experience

I have performed geological field work in the following areas:

1. Inyo batholiths and their contact zones, Sierra Nevada, eastern California.

2. Contact metamorphic rocks in the Santa Rosa Range, northern Nevada.

3. Tertiary intrusions and Precambrian metamorphic rocks, Front Range, Colorado.

4. Granitic rocks, migmatites and metamorphic rocks in the Grenville province of southeastern Ontario.

5. The Proterozoic igneous and metamorphic rocks in the Bamble, Telemark, and Rogaland-Vest Agder sectors in southern Norway and the Caledonian stratabound ore deposits in central Norway.

6. The Pre-Tertiary metamorphic complex and the Cenozoic igneous rocks and associated ore deposits in Taiwan.

7. The hot springs and active geothermal field in Taiwan.

8. The Mesozoic volcanic and plutonic rocks in southeast China.

III. Invited Lectures and Conferences

1. Presented lecture on "Oxygen and Hydrogen Isotope Studies and their Bearing on the Origin and Movement of Water during Metamorphism"; also acted as Discussant in the "Field Investigation" session, Gordon Research Conference in Geochemistry: Mixed Volatile and Metamorphism", Plymouth, NH., August 30-September 3, 1971.

2. Presented lecture on "Oxygen Isotope Studies on Rocks from the Grenville Province and other Parts of the Canadian Shield" at the Geophysical Laboratory, Carnegie Institute of Washington, Washington, DC, October 14, 1971.

3. Presented lecture on "Oxygen Isotope Studies of Granites and Migmatites from the Grenville Province" at Conference on Experimental Mineralogy, Petrology and Economic Geology, Carleton University, Ottawa, Canada, February 17-18, 1972.

4. Presented seminar on "Oxygen and Carbon Isotope Studies of Rocks from the Canadian Precambrian Shield" at the California Institute of Technology, Pasadena, CA, May 12, 1972.

5. Presented a series of lectures on "Stable Isotope Geochemistry" at the National Taiwan University, Taipei, Taiwan, May 29-July 8, 1972.

6. Presented lecture on "Mobility of Oxygen Isotopes during Metamorphism" at the Carnegie Conference on Geochemical Transport and Kinetics, Warrenton, VA, June 4-6, 1973.

7. Participated in the Gordon Research Conference in Geochemistry on "Hydrothermal Fluids and Ore Deposits", Andover, NH, August 27-31, 1973.

8. Presented lecture on "Oxygen Isotope Exchange in Minerals and Rocks during Metamorphism" at NATO Advanced Study Institute on "Volatiles in Metamorphism", Nancy, France and Chiareggia, Italy, August 23-September 9, 1974.

9. Participated in the international conference on "Geothermometry and Geobarometry", The Pennsylvania State University, October 5-10, 1975.

10. Presented lecture on "Some Application of Stable Isotope Studies in Petrology", Geological Society of China, Taipei, Taiwan, June 19, 1976.

11. Presented seminar on "Oxygen Isotope Studies of Granites and Migmatites from the Canadian Shield", Geological Survey of Japan, Tokyo, July 21, 1976.

12. Presented seminar on "The Distribution and Isotopic Composition of Sulfur in Coal", Department of Chemistry, McMaster University, Hamilton, Ontario, Canada, July 28, 1977.

13. Presented paper on "Mineralogy and S^{34}/S^{32} Ratios of Sulfides Associated with Kimberlite, Xenoliths, and Diamonds", 2nd International Kimberlite Conference, Santa Fe, NM, October 3, 1977.

14. Presented lecture on "Stable Isotope Geochemistry and its Application to Soil Science", Department of Agronomy, Purdue University, May 8, 1978.

15. Presented lectures on "Stable Isotope Geochemistry - Principles and Recent Developments" at the Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan, June 30 and July 1, 1978.

16. Presented paper on "Authigenic Kaolinite and Calcite in Coals - An Isotopic Study", Symposium on Marine Resources in Taiwan, Taipei, July 8-9, 1978.

17. Presented paper on "Sulfur Isotope Variations in Coals from the Illinois Basin", 4th International Conference on Geochronology, Cosmochronology, and Isotope Geology, Snowmass at Aspen, CO, August 20-25, 1978.

18. Presented seminar on "Origin of Sulfur in Coal - Isotopic Evidence", Department of Geosciences, Purdue University, West Lafayette, IN, February 1, 1979.

19. Presented lecture on "Oxygen and Hydrogen Isotope Studies of Geothermal Waters and Hot Springs in Taiwan", Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan, August 20, 1979.

20. Presented paper on "Sulfur and Oxygen Isotope Ratios in Stratabound Ores and Wall Rocks from Killingdal Mine, Central Norwegian Caledonides", Symposium on Caledonian - Appalachian Stratabound Sulfides, Trondheim, Norway, September. 10-12, 1979.

21. Presented lecture on "Application of Stable Isotopes to Geologic Problems", Institute of Geology, University of Oslo, Norway, September 19, 1979.

22. Presented seminar on "Oxygen Isotope Evolutionary Trends of the Canadian Precambrian Shield", Department of Geology, Indiana University, October 15, 1979.

23. Presented seminar on "Oxygen and Carbon Isotope and Mineral Chemistry of Greenschist Facies Metamorphic Rocks from Eastern Taiwan", National Taiwan University, January 5, 1980.

24. Presented paper on "Oxygen and Hydrogen Isotope Ratios of Hot Springs and Geothermal Waters in Taiwan - A Preliminary Study", 3rd International Symposium on Water-Rock Interaction, Edmonton, Canada, July 17-20, 1980.

25. Presented paper on "Oxygen and Hydrogen Isotope Studies of Hotsprings and Geothermal Waters in Taiwan", Symposium on Isotope Studeis in Hydrogeology, DeKalb, IL, September 18, 1980.

26. Presented paper on "Oxygen and Carbon Isotopes and Mineral Chemistry of Metamorphic Rocks from the Nanao District, Eastern Taiwan", U.S.-Taiwan Symposium on Plate Tectonics and Metamorphic Geology, Taipei, Taiwan, January 5-13, 1981.

27. Presented lecture on "Stable Isotopes in Geothermal Research", Chinese Petroleum Corporation, Miaoli, Taiwan, January 28, 1981.

28. Presented seminar on "Stable Isotope Studies of Geothermal Systems in Taiwan", Central Geological Survey, Taipei, Taiwan, February 20, 1981.

29. Presented lecture on "Oxygen Isotopes in Petrology", Department of Geology, National Taiwan University, Taipei, Taiwan, March 9, 1981.

30. Presented lecture on "Stable Isotope Geochemistry - Recent Development", Department of Chemistry, National Taiwan University, Taipei, Taiwan, May 8, 1981.

31. Presented lecture on "Stable Isotopes and their Applications to Geology", Department of Earth Sciences, National Cheng-Kung University, Tainan, Taiwan, May 29, 1981.

32. Presented seminar on "Distribution and Isotopic Composition of Sulfur in Coal", Chinese Petroleum Corporation, June 19, 1981.

33. Presented seminar on "Oxygen Isotope Study of granites and its Bearing on the Evolution of the Canadian Shield", Department of Geology, University of Illinois, Urbana, IL, October 2, 1981.

34. Presented seminar on "Stable Isotope Studies of Geothermal Systems in Taiwan", Department of Geological Sciences, Case Western Reserve University, Cleveland, OH, March 31, 1982.

35. Presented lecture on "Application of Stable Isotopes to Geology", Department of Geological Sciences, Cleveland State University, Cleveland, OH, april 2, 1982.

36. Presented paper on "Oxygen Isotope Study on the Origin of Granitic and Syenitic Plutons from the Grenville Province in Canada", 5th International Conference on Geochronology, Cosmochronology and Isotope Geology, Nikko, Japan, June 27-July 2, 1982.

37. Presented lecture on "Oxygen Isotope Composition and Evolutionary Trend of the Canadian Shield", also as session chairman, Workshop on Isotope Geology, Academia Sinica, Taipei, Taiwan, July 12-13, 1982.

38. Presented paper on "Stable Isotope Studies of Waters and Carbonate Minerals from the Chingshui Geothermal Area, Taiwan", Circum-Pacific Energy and Mineral Resources Conference, Honolulu, HI, Aug. 22-28, 1982.

39. Presented lecture on "Correlation Between Oxygen Isotope and Chemical Compositions in Granitic Rocks from the Precambrian Basement in the Midcontinent Region of North America", Department of Geology, National Taiwan University, Taipei, Taiwan, June 1, 1984.

40. Discussion leader "Current Research on Stable Isotope Geochemistry in Taiwan", Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan, June 5-6, 1984.

41. Presented lecture on "Oxygen Isotope Study of the Grenville Province Rocks in the Canadian Shield", NATO Advanced Study Institute on "The Deep Proterozoic Crust in the North Atlantic Provinces", Moi, Norway, July 16-30, 1984.

42. Participated in the Gordon Research Conference on "Inorganic Geochemistry of Hydrothermal Ore Deposits", Proctor Academy, Andover, NH, Aug. 5-9, 1985.

43. Presented paper on "Oxygen Isotope Evidence for Hydrothermal Alteration in Buried Precambrian Basement Rocks from the Midwest USA", 6th International Conference on Basement Tectonics, Santa Fe, NM, Sept. 16-20, 1985.

44. Participated in the workshop on "Cratonic Processes" organized by Continental Interior Crustal Studies Consortium, St. Louis, MO, Feb. 23-26, 1986.

45. Participated in Illinois Superdeep Drillhole Scientific Planning Workshop sponsored by the University of Illinois, Urbana, IL, April 2-4, 1986.

46. Presented seminar on "Hydrothermal Alteration of Buried Precambrian Basement Rocks in the Mid-Continent", Department of Geological Sciences, Northwestern University, Evanston, IL, April 4, 1986.

47. Presented eight lectures and seminars on "Stable Isotope Geochemistry" at the Institute of Geochemistry, Academia Sinica in Guiyang, the Institute of Geology in Beijing, and the Geology Department in Nanjing University, May 18-June 9, 1986.

48. Participated and presented paper on "Isotopic and Chemical Evidence for Hydrothermal Alteration in Buried Precambrian Basement Rocks from the Midcontinent, U.S.A.", 6th International Conference on Geochronology, Cosmochronology and Isotope Geology", Cambridge, England, June 30-July 4, 1986.

49. Participated and presented lecture at the Proterozoic Geochemistry Field Conference, Colorado, U.S.A., July 13-19, 1986.

50. Presented seminar on "Stable Isotope Studies of Vein Type Tungsten Deposits in China", Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan, Jan. 5, 1987.

51. Particpated and presented paper on "Oxygen Isotope Studies of Rocks Across the Grenville Front", 7th International Conference on Basement Tectonics, Kingston, Ontario, Canada, Aug. 17-21, 1987.

52. Particpated in the Midcontinent Rift System Scientific Drilling Workshop sponsored by Deep Observation and Sampling of the Earth's Continental Crust, Inc., Duluth, MN, Sept. 23-25, 1987.

53. Particpated and presented papers on "Oxygen and Carbon Isotope Studies of Vein Type Tungsten Deposits and the Associated Granitoids in Dajishan, Jiangxi Province, Southeast China", and "A Low ^{18}O Mesozoic Body - Suzhou Granitic Body", International Symposium on Petrogenesis and Mineralization of Granitoids, Guangzhou, China, Dec. 7-10, 1987.

54. Presented seminar on "Oxygen and Strontium Isotopic Constraints on the Origin of the Karisimbi Potassic Lava Series, East African Rift Valley", Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan, Jan. 4, 1988.

55. Participated and presented paper on "Oxygen Isotope Geochemistry of Precambrian Shales in the Kaapvaal Craton, South Africa", V.M. Goldschmidt Conference, Baltimore, MD, May 11-13, 1988.

56. Presented seminar on "Stable Isotope Studies of Tungsten Deposits in Dajishan, Jiangxi, China", Institute of Geology and Mineral Resources, Guilin, China, Feb. 28, 1989.

57. Presented a series of seminars on stable isotope geochemistry at the Institute of Earth Sciences, Academia Sinica, Taipei, Taiwan: (1) "Isotope Fractionations and Geothermometry"; (2) "Geothermal Systems"; (3) "Igneous Rocks"; (4) "Sedimentary Rocks"; (5) "Metamorphic Rocks, Ore Deposits", July 4-Aug. 1, 1989.

58. Participated and presented invited paper on "Stable Isotope Studies of Vein Type Tungsten Deposits in Dajishan, Jiangxi Province, Southeast China", Epstein 70th Birthday Symposium, California Institute of Technology, Pasadena, CA, Dec. 1-2, 1989.

59. Presented seminar on "Stable Isotope Studies of Geothermal Systems and Hot Springs in Taiwan", Institute of Geophysics, National Central University, Chungli, Taiwan, June 13, 1990.

60. Presented lecture on "Oxygen and Hydrogen Isotope Geochemistry and its Application to Nuclear Waste Disposal", Nuclear Energy Research Institute, Taipei, Taiwan, June 25, 1990.

IV. Publications

Theses

1. Geology of the Chi-chi Area, Nan-tou District, Taiwan. B.Sc. Thesis, National Taiwan University (1962).

2. Oxygen, Carbon, and Hydrogen Isotope Studies of Contact Metamorphism. Ph.D. Thesis, California Institute of Technology (1969).

Abstracts and talks presented at scientific meetings

1. Shieh, Y.N. and H.P. Taylor (1969): Oxygen and hydrogen isotope studies of contact metamorphism in the Santa Rosa Range, Nevada and other areas. Trans. Amer. Geophys. Union, 50, 4, p. 328.

2. Shieh, Y.N. and H.P. Taylor, Jr. (1969): Oxygen and carbon isotope studies of contact metamorphism of carbonate rocks. Trans. Amer. Geophys. Union, 50, p. 328.

3. Shieh, Y.N. and H.P. Schwarcz (1971): Oxygen isotope studies on some granitic rocks from the Grenville province of southeastern Ontario. Trans. Amer. Geophys. Union, 52, p. 365.

4. Shieh, Y.N. and H.P. Schwarcz (1971): The oxygen isotope composition of the Canadian Precambrian Shield. Geol. Soc. Am. 1971 Annual Meeting, Washington, DC, Abstracts with Programs, p. 701.

5. Shieh, Y.N., H.P. Schwarcz and D.M. Shaw (1972): Correlation between O^{18}/O^{16} ratios and chemical compositions of the Apsley gneiss from the Grenville province of southeastern Ontario. Trans. Amer. Geophys. Union, 54, p. 556.

6. Price, F.T. and Y.N. Shieh (1976): Sulfur isotope studies of coals from the eastern interior coal basin in Indiana. Geol. Soc. Am. 1976 Annual Meeting, Denver, CO, Abstracts with Programs, pp. 1053-1054.

7. Tsai, H.M., Y.N. Shieh and H.O.A. Meyer (1977): Mineralogy and S^{34}/S^{32} ratios of sulfides associated with kimberlite, xenoliths and diamonds. 2nd International Kimberlite Conference, Santa Fe, NM.

8. Shieh, Y.N. and T.G. Suter (1977): Oxygen isotope ratios of authigenic kaolinite and calcite in coals from Indiana and Illinois. Geol. Soc. Am. 1977 Annual Meeting, Seattle, WA, Abstracts with Programs, pp. 1173-1174.

9. Shieh, Y.N. (1978): Oxygen isotope studies of rocks across the Grenville Front near Val d'Or, Quebec. Trans. Amer. Geophys. Union, 59, p. 407.

10. Shieh, Y.N. (1978): High O^{18} granitic plutons from the Frontenac Axis, Grenville province of Ontario. Geol. Soc. Am. 1978 Annual Meeting, Toronto, Ontario, Abstracts with Programs, 10, p. 491.

11. Price, F.T. and Y.N. Shieh (1979): An isotopic study of sulfur in Illinois Basin coals. Geol. Soc. Am. 1979 Annual Meeting, San Diego, CA, Abstracts with Programs, 1, p. 499.

12. Chu, J.B. and Y.N. Shieh (1979): Oxygen and carbon isotope and mineral chemistry of greenschist facies metamorphic rocks from eastern Taiwan. Trans. Amer. Geophys. Union, 60, p. 973-974.

13. Shieh, Y.N. and I.J. Rui (1979): Sulfur and oxygen isotope ratios in stratabound ores and wall rocks from Killingdal Mine, Central Norwegian Caledonides. Symposium on Caledonian-Appalachian Stratabound Sulfides, Trondheim, Norway, Sept. 1979, Abstract vol., p. 30.

14. Shieh, Y.N. (1980): Oxygen isotope compositions of granitic and syenitic plutons in the Central Metasedimentary Belt, Grenville Province of Ontario. Trans. Amer. Geophys. Union, 61, p. 410.

15. Heaman, L.M., Y.N. Shieh, R.H. McNutt, D.M. Shaw (1980): Interpretation of strontium and oxygen isotope data from the Loon Lake pluton and the Apsley gneiss, Grenville Province, Ontario. Trans. Amer. Geophys. Union, 61, p. 387.

16. Shieh, Y.N., F.P. Cherng and T.C. Hoering (1980): Oxygen and hydrogen isotope studies of hotsprings and geothermal waters in Taiwan. Trans. Amer. Geophys. Union, 61, p. 1191.

17. Shieh, Y.N. and I.J. Rui (1980): Sulfur and oxygen isotope ratios stratabound ores and wall rocks from Killingdal Mine, Central Norwegian Caledonides. Norges Geologiske Undersokelse, 360, p. 231.

18. Chu, J.B. and Y.N. Shieh (1981): Oxygen and carbon isotopes and mineral chemistry of metamorphic rocks from the Nanao District, eastern Taiwan. U.S.-Taiwan Symposium on Plate Tectonics and Metamorphic Geology, Abstract vol., p. 21.

19. Shieh, Y.N., T.C. Huang, C.Y. Lan and J.B. Chu (1981): Oxygen isotope study of drill core samples and silica minerals from Tatun geothermal area, Taiwan. Geol. Soc. China 1981 Annual Meeting, Taipei, Taiwan, Abstract vol., p. 13.

20. Shieh, Y.N. and R.H. McCallister (1981): Oxygen isotopic and mineralogic studies of Precambrian granites from the Illinois Deep Hole Project. Geol. Soc. Am. 1981 Annual Meeting, Cincinnati, OH, Abstracts with Programs, 13, p. 553.

21. Shieh, Y.N. (1982): Oxygen isotope study on the origin of granitic and syenitic plutons from the Grenville province in Canada. 5th International Conference on Geochronology, Cosmochronology and Isotope Geology, Nikko, Japan, Abstract vol., p. 343.

22. Liu, K.K., Y.N. Shieh and S.C. Chiang (1982): Stable isotopes in waters and carbonate minerals from the Chingshui geothermal area, Taiwan. Circum-Pacific Energy and Mineral Resources Conference, Honolulu, HI, Abstract vol.

23. Heaman, L.M., D.M. Shaw, R.H. McNutt, J.H. Crocket and Y.N. Shieh (1983): The effect of fluid interaction on the geochemistry and isotopic composition of the Tallan Lake Sill, Grenville Province, Ontario. Geol. Assoc. Canada, Mineral Assoc. Canada and Canadian Geophys. Union Joint Annual Meeting, Program with Abstract, 8, p. A31.

24. Shieh, Y.N., C.Y. Lan and T.C. Huang (1983): Stable isotope studies of drill core sample and silica minerals from Tatun geothermal area, Taiwan. Geol. Soc. Am. 1983 Annual Meeting, Indianapolis, IN, Abstracts with Programs, 15, p. 686.

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41. Chen, Y,G., J.C. Liu, Y.N. Shieh, and T.K. Liu (2004). Late Pleistocene to Holocene environmental changes as recorded in the sulfur geochemistry of coastal plain sediments, southwestern Taiwan. Journal of Asian Earth Sciences, 24, 213-224.

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1. Shieh, Y.N. and F.T. Price (1978): Sulfur isotope variations in coals from the Illinois Basin. in Short Papers of the Fourth International Conference, Geochronology, Cosmochronology, Isotope Geology, 1978 (Ed., R.E. Zartman). U.S. Geological Survey Open-File Report 78-701, 393-395.

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3. Shieh, Y.N., F.P. Cherng and T.C. Hoering (1980): Oxygen and hydrogen isotope ratios of hot springs and geothermal waters in Taiwan - a preliminary study. Proceedings of the 3rd International Symposium on Water-Rock Interaction, Edmonton, Canada, 1980, 186-187.

Other Publications

1. Liu, K.K., T.F. Yui, Y.N. Shieh, L.H. Chen, C.Y. Hu and C.S. Chiang (1982): Oxygen, hydrogen and carbon isotope studies of the Ching-shui geothermal field, Ilan, Taiwan. Publication of the Institute of Earth Sciences, Academia Sinica, 73 pp.

2. Liu, K.K., C.H. Chen, Y.N. Shieh and C.S. Chiang (1984): Oxygen, hydrogen and carbon isotope studies of Tatun geothermal area in northern Taiwan. Publication of the Institute of Earth Sciences, Academia Sinica, ASIES-CR 8401, 39 pp.

3. Chen, C.H., K.K. Liu, Y.N. Shieh (1985): Geochemical and stable isotope studies of bauxites from Tatun volcanic area, northern Taiwan. Publication of the Institute of Earth Sciences, Academia Sinica, ASIES-CR-8501, 44 pp.

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5. Shieh, Y.N. (2013). A Reflection on the establishment of stable isotope geochemistry program at Academia Sinica in Taiwan. Institute of Earth Sciences, Academia Sinica 30^{th} Anniversary Volume. 141-150.

V. Grants and Awards

1. NSF Grant EAR 75-19999: "Oxygen Isotope Studies of Rocks Across the Grenville Front", November 1, 1975-April 30, 1978. $41,500.

2. NSF Grant EAR 7813394: "Oxygen Isotope Studies of Granitic and Nepheline Bearing Rocks from the Grenville Province, Ontario", August 1, 1978-January 31, 1981. $48,400.

3. NSF Grant INT 77-12165: "Geological and Geochemical Investigations, Including Stable Isotopes and Mineral Chemistry of Cenozoic Igneous Rocks and Associated Ore Deposits in Taiwan", March 1, 1978-August 31, 1980. $29,000 (with H.O.A. Meyer as co-principal investigator).

4. NSF Energy Traineeship 7419556: "Sulfur Isotope Studies of Coals", September 1, 1974-August 31, 1975. $6,000; Renewed: September 1, 1975-August 31, 1976. $6,300; Renewed: September 1, 1976-August 31, 1977. $7,000.

5. NATO Advanced Study Inst. Travel Grant, August 22-September 10, 1974. $250.

6. Purdue Research Foundation International Travel Grant for 1974. $300.

7. Pacific Cultural Foundation Travel Grant for 1976. $400.

8. NSF International Travel Grant FCV 111, Trip to Taiwan to initiate a research proposal under the US-China Cooperative Science Program, December 2-December 15, 1976.. $2,200.

9. Purdue Research Foundation International Travel Grant for 1982. $975.

10. Chinese Petroleum Corporation grant through the Institute of Earth Sciences, Academia Sinica (as co-investigator): "Stable Isotope Studies of Chingshui Geothermal Field, Ilan, Taiwan", March 1, 1981-February 28, 1982. NT $560,000 (US $14,000).

11. Chinese Petroleum Corporation grant through the Institute of Earth Sciences, Academia Sinica (as co-investigator): "Stable Isotope Studies of Tatun Geothermal Area in Northern Taiwan", April 1, 1982-March 31, 1983. NT $540,000 (US $13,500).

12. National Science Council (Republic of China) grant through National Cheng-Kung University (as co-investigator): "Spilitization of Tertiary Basalts in Taiwan - Petrological and Stable Isotope Studies", January 1, 1984-June 30, 1985. NT $475,000 (US $11,875).

13. Purdue Research Foundation International Travel Grant for 1986. $550.

14. NSF Grant EAR 8517203: "Oxygen Isotope Geochemistry of Precambrian Volcanic and Sedimentary Rocks in the Kaapvaal Basin, South Africa", February 1, 1986-January 31, 1989. $69,062.

15. Purdue David Ross Grant: "Oxygen and Hydrogen Isotope Studies of Precambrian Basement Rocks from the Midcontinent Region of North America", June 1, 1987-May 31, 1989, $15,440.

16. National Science Council (Taiwan) Research Grant: "Isotopic Investigation of Island Arc Volcanic Rocks in Taiwan", August 1, 1988-July 31, 1989. NT $657,200 (US $25,277).

17. Purdue Global Initiative Faculty Grant: "Stable and Radiogenic Isotope Studies of Mesozoic Igneous Rocks from Southeast China", January 1-December 31, 1994, $2500.

18. Purdue University Teaching Equipment Grant: "Acquisition of Petrographic Microscopes for Undergraduate Instruction in Petrology and Mineralogy", 1995-1996, $23,630.

19. As co-investigator in a research grant awarded by the National Science Council in Taiwan to Dr. Yue-Gau Chen of National Taiwan University: "Application of Sulfur Isotopes to the Study of the Evolution of Coastal Environment in Southwestern Taiwan". August 1, 1996-July 31, 1997, NT $1,368,600 (US $50,689).

VI. Evidence of National and International Recognition

1. Invited lectures and conferences: see section III.

2. Published works

Most of the papers published are frequently cited in both the scientific literature and standard texts including:

Hoefs: Stable Isotope Geochemistry, Springer-Verlag, NY, 1973, pp. 54, 58, 60, 103-110, Figs. 36 and 37.

Hofmann, Gilette, Yoder, Yund (editors): Geochemical Transport and Kinetics, Carnegie Institution of Washington, 1974, pp. 230, 306, 308, 311, 323, 325-335.

Verhoogen et al.: The Earth-An Introduction to Physical Geology, Holt, Rinehart, and Winston, NY, 1970, pp. 549, 556, 590-591, 594, 597, Figs. 10-36.

Miyashiro: Metamorphism and Metamorphic Belts, Halsted Press, NY, 1973, pp. 118-119.

Carmichael, Turner, Verhoogen: Igneous Petrology, McGraw-Hill, NY, 1974, pp. 96, 704.

Faure: Principle of Isotope Geology, John Wiley & Sons, 1977, pp. 356, 357, 370, 371, 377, 378, 391, 401.

Ding: Oxygen and Hydrogen Isotope Geochemistry (in Chinese), Geology Publishing Co., Beijing, China, 1980, pp. 97, 124-126, 131, Figs. IX-1, IX-2, IX-5.

Newton, Navrotsky and Wood (editors): Thermodynamics of Minerals and Melts, Springer-Verlag, NY, 1981, pp. 101-108.

Turner: Metamorphic Petrology, McGraw-Hill, NY, 1981, pp. 139, 142, 143, 294.

Craig and Vaughan: Ore Microscopy and Ore Petrography, John Wiley & Sons, 1981, pp. 116, 117, 247, 248, 249, Figs. 7.9, 10.5.

Ehlers and Blatt: Petrology, Freeman & Co., 1982, p. 703.

Hendersen: Inorganic Geochemistry, Pergamon Press, 1982, pp. 243, 332.

Ferry (editor): Characterization of Metamorphism through Mineral Equilibria. Reviews in Mineralogy, vol. 10, Mineralogical Society of America, 1982, pp. 330, 331, 353.

Schopf: Earth's Earliest Biosphere: Its Origin and Evolution, Princeton University Press, 1983, pp. 157, 518.

Zhang: The Application of Stable Isotopes to Geology (in Chinese), Shaanxi Science and Technology Publishing House, 1985, pp. 14, 28, 264.

Heaman: Petrology of Igneous and Metamorphic Rocks, 2nd ed., McGraw-Hill, NY, 1985, p. 107.

Valley, Taylor and O'Neil (editors): Stable Isotopes in High Temperature Geological Processes. Reviews in Mineralogy, vol. 16, Mineralogical Society of America, 1986, pp. 249, 251, 270, 457, 458, 459, 473, 484, 488.

3. The stable isotope laboratory at Purdue was one of the 19 laboratories invited to participate in determining the geochemical O^{18} scale proposed by Drs. P. Blattner and J.R. Hulston, Institute of Nuclear Sciences, Lower Hutt, New Zealand (Geochim. Cosmochim. Acta, 42, 59-62, 1978). Also participated in the intercomparison experiment for the oxygen, carbon, and hydrogen isotope standards distributed by the Central Institute for Isotope and Radiation Research, DDR Academy of Science, Leipzig.

4. Consulted by Dr. K. Gopalan of Physical Research Laboratory in India regarding the setting up of the first stable isotope laboratory in that country.

5. Served as advisor to the National Science Council and Academia Sinica, Republic of China to initiate an isotope geochemistry research program in Taiwan.

6. As reviewer of research proposals for the National Science Foundation, the Petroleum Research Funds of the American Chemical Society, and the National Science Council of the Republic of China.

7. As article referee for a number of scientific journals including Geochimica et. Cosmochimica Acta, American Journal of Science, Journal of Geophysical Research, Journal of Geology, Science, Nature, Geology, and bulletin of the Geological Society of China.

8. Member of editorial board, Isotope Geoscience - an international journal. Elsevier Science Publishers B.V.

9. Invited to visit and lecture at the Institute of Geochemistry, Academia Sinica in Guiyang, the Institute of Geology in Beijing, the Geology Department at Nanjing University, and the Department of Earth and Space Sciences, University of Science and Technology of China.

10. Inivted to visit the Federal University of Pernambuco at Recife, Brazil to assist establishing the first stable isotope lab in that country.

11. Member of Search Committee for Director, Institute of Earth Sciences, Academia Sinica, Taipei

12. Member of Visiting Committee, Institute of Earth Sciences, Academia Sinica, Taipei

13. Member of Visiting Committee, Department of Geoscience, National Taiwan University

E. SERVICE

1985-88	Chairman, Curriculum Committee
1988-94	Member, Graduate Committee
1989-91	Member, Exchange/Cooperative Program with the Peoples Republic of China
1989-91	Member, AMS Search Committee and Geophysics Search Committee
1989-93	Member, School of Science Distinguished Alumni Screening Committee
1990-92	Member, AMS Executive Committee
1990-95	Member, Safety Committee
1992-94	School of Science Grade Appeals Committee
1992-95	Member, Head's Advisory and Long-Range Planning Committee
1993-94	Member, Atmospheric Chemist Search Committee
1994-95	School of Science Work/Study Abroad Program Committee
1996-98	Library Committee
1996-98	Instructional Equipment Committee (Chair)
1997-00	University Senate
2003=11	Outreach and Diversity
	Safety, Resources, and Library (Chair)
	Faculty Diversity Issues
	Grievance Hearing (Altenate)

2004-05	Alumni and Industrial
2005-11	Solid Earth Undergraduate Recruitment.
2012-14	Honors
	Library and Lab Safety