



Ching-Chou Fu Assistant Research Fellow

傅慶州 助研究員

TEL : +886-2-2783-9910 ext. 1513

FAX : +886-2-2783-9871

E-mail : ccfu@earth.sinica.edu.tw

研究領域：氣(流)體地球化學、地震觀測

Research domain : Gas/fluid Geochemistry, Earthquake Observations

學歷 EDUCATION

- 2006.09 to 2012.07: Ph. D. Department of Geosciences, National Taiwan University (TAIWAN)
- 2002.09 to 2006.06: M.S. Department of Geosciences, National Taiwan University (TAIWAN)
- 1998.09 to 2002.06: B.S. Department of Geology, Chinese Culture University (TAIWAN)

經歷 EXPERIENCES

- 2018.08 to now: Assistant Research Fellow, Institute of Earth Sciences, Academia Sinica
- 2014.02 to 2018.08: Postdoctoral Fellow, Institute of Earth Sciences, Academia Sinica
- 2014.01 to 2014.01: Postdoctoral Fellow, Institute of Oceanography, National Taiwan University
- 2012.09 to 2013.12: Postdoctoral Fellow, Energy Research Center, National Taiwan University
- 2012.07 to 2012.08: Postdoctoral Fellow, Institute of Oceanography, National Taiwan University
- 2010.09 to 2011.09: Visiting student, National Institute of Geophysics and Volcanology - Section of Palermo, Italy

榮譽 AWARDS

- 2020 Excellent Young Scholar Project, Title: Imaging the seismic cycle and deep fluid with sophisticatedly equipped earthquake observatory, MOST 科技部優秀年輕學者研究計畫 (2020.08-2023.07)
- 2019 Chinese Academy of Sciences Taiwan Young Talent Programme, Visiting Researcher
- 2017 Postdoctoral Research Paper Award from the Ministry of Science and Technology, R.O.C.
- 2010 Ph.D. student research aboard fellowship, National Science Council, Taiwan
- 2007 Young Scientist Award from the 9th International Conference of Gas Geochemistry
- 2005 Dean's Award of College of Science, National Taiwan University

受邀演講 *INVITED TALKS*

1. Seminar at Department of Geology, Chinese Culture University, 2020: “Earth’s outgoing longwave radiation variability prior to $M \geq 6.0$ earthquakes in the Taiwan area during 2009-2019”
2. The 2nd Symposium on Gas Isotope Technique and Geosciences Applications, Lanzhou, China, September 8-11, 2019: “Exploring the release of radioactive gas in the volcanic area and its tectonic implications”.
3. Seminar at the Lanzhou Center for Oil and Gas Resources, Institute of Geology and Geophysics, CAS. Lanzhou, China, September 13, 2019: “Applications of gas geochemistry in geosciences”.
4. 6th International Workshop on Earthquake Preparation Process 2019, Chiba, Japan, May 31 to June 1, 2019: “Changes in gas and fluid geochemistry in the Chelungpu fault zone before the 2013 M6.2 Nantou earthquake”
5. The 17th Annual Conference of the Chinese Society for Mineralogy, Petrology and Geochemistry, Zhejiang, Hangzhou, April 19-22, 2019: “Changes in gas and fluid geochemistry at the Taiwan Chelungpu Fault Borehole before the 2013 M6.2 Nantou earthquake”
6. Seminar at the Institute of Oceanography, National Taiwan University, 2018: “Progress in the application of gas geochemistry to earthquake precursor in Taiwan and its future scenarios”
7. The 17th Japan-Taiwan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Tsukuba, Japan, September 4, 2018: “Changes in groundwater chemistry at the Taiwan Chelungpu Fault Borehole before the 2013 M6.2 Nantou earthquake”
8. Seminar at Department of Earth Sciences, National Taiwan Normal University, 2018: “Progress in the application of gas geochemistry to earthquake precursor in Taiwan”
9. Seminar at Institute of Applied Geosciences, National Taiwan Ocean University, 2017: “Observations of fluid and gas geochemistry for earthquake forecasting in Taiwan: Past, recent status and future scenarios”
10. The 1st Symposium on Gas Isotope Technique and Geosciences Applications, Lanzhou, China, August 22-25, 2017: “Gas geochemistry applied to earthquake precursor in Taiwan: Recent status and future scenarios” (**Keynote Speech**)
11. International Workshop on Earthquake Preparation Process 2017, Chiba, Japan, May 25-26, 2017: “Exploring the relationship between soil degassing and seismic activity by continuous radon monitoring in the Longitudinal Valley of eastern Taiwan”
12. The Japan Geoscience Union Meeting, Chiba, Japan, May 20-24, 2017: “Implications of radon and gamma rays in northern Taiwan”
13. The 15th Japan-Taiwan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Tsukuba, Japan, September 7, 2016: “Temporal changes in gas geochemistry and gamma rays as a precursor of the 2016 M6.6 Meinong earthquake, southern Taiwan”

14. International Workshop on Earthquake Preparation Process 2016, Chiba, Japan, May 27-28, 2016: “Precursory gas geochemical and hydrogeological anomalies associated with the M6.2 Earthquake of 27 March 2013 in central Taiwan”
15. The Japan Geoscience Union Meeting, Chiba, Japan, May 22-26, 2016: “Precursory gas geochemical and gamma rays anomalies prior to the 2016 M6.4 Meinong earthquake, southern Taiwan”
16. Seminar at Department of Earth Sciences, National Central University, 2016: “Fluids geochemistry for seismic precursory study in Taiwan”
17. 2016 International mini Workshop on Earthquake Precursors, Taiwan, January 20-21, 2016: “Radon and gamma rays anomalies observed in northern Taiwan: a possible connection with the seismicity near the subduction zone”
18. Seminar at Department of Geology, Chinese Culture University, 2014: “Soil gas geochemistry for seismic precursory study in Taiwan”

專業經歷/服務 *PROFESSIONAL EXPERIENCE/SERVICES*

2015 to now: Member of International Committee, International Conference of Gas Geochemistry (ICGG)

2019 to 2021: Professional Committee of Gas Geochemistry, Chinese Society for Mineralogy Petrology and Geochemistry

Reviewer of manuscripts submitted to:

– Chemical Geology, 2016(1), 2017(1) / Marine and Petroleum Geology (JMPGE), 2016(1), 2017(1), 2019(1) / Terrestrial, Atmospheric and Oceanic Sciences (TAO), 2016(1) / AGU Geophysical Monograph, 2017(2) / Soil Systems, 2018(1) / Scientific Reports, 2018(1), 2020(2) / Pure and Applied Geophysics, 2018(1) / International Journal of Environmental Analytical Chemistry, 2019(1) / Geofluids, 2018(1), 2019(3) / Proceedings of the Japan Academy, Series B, 2020(1) / Frontiers in Earth Science, 2020(3) / Journal of Geochemical Exploration, 2020(1)

Reviewer of proposals submitted to:

– Earth Observatory of Singapore (EOS), Singapore, 2019(1)
 – National Science Foundation (NSF), USA, 2019(1)
 – Ministry of Science and Technology, R.O.C., 2020(1), 2021(1)

Organizer of conference/workshop:

- 109 Annual Conference of Chinese Taipei Geophysical Society & Geological Society Located in Taipei, Taipei, 2020
- 5th International Geo-hazards Research Symposium - in memory of Prof. Tsanyao Frank Yang, 2016

Session convener in:

- The 1st Symposium on Gas Isotope Technique and Geosciences Applications, Lanzhou, China, August 22-25, 2017, “Applications of stable isotope techniques to the studies of volcanoes and earthquake prediction”
- International Conference in commemoration of 20th Anniversary of the 1999 Chi-Chi Earthquake, Taipei, September 15-19, 2019, "Earthquake precursors and forecasting"
- Taiwan Geoscience Assembly, Nangang, May 14-17, 2019, "Geophysics, Exploration Geophysics, and Environmental Geophysics"; " Litho-geochemistry" & “Earthquake Precursors and Observational Seismology”
- 109 Annual Conference of Chinese Taipei Geophysical Society & Geological Society Located in Taipei, Taipei, November 17-18, 2020, "M5: Multidimensional Geophysical and Geochemical Observations for Earthquake Generation Process "

Coordinator of Colloquium, Institute of Earth Sciences, Academia Sinica, 2019-2021

Society membership:

- Geological Society Located in Taipei (GST)
- Chinese Taipei Geophysics Society (CGS)
- American Geophysical Union (AGU)
- Geochemical Society (GS)
- Japan Geoscience Union (JpGU)
- Asia Oceania Geosciences Society (AOGS)
- Chinese Society for Mineralogy Petrology and Geochemistry (CSMPG)

著作 PUBLICATIONS

SCI Journal articles *Corresponding author

2021

1. **Fu, C.C.***, Lai, C.W., Yang, T.F., Hilton, D.R., Chen, C.H., Walia, V., Kumar, A., and Lee, L.C., (2021). An automatic system for continuous monitoring and sampling of groundwater geochemistry in earthquake-prone regions of SW Taiwan. *Frontiers in Earth Science* 9:635913. <https://doi.org/10.3389/feart.2021.635913>
2. Dhar, S., Randhawa, S.S., Kumar, A.*, Walia, V.*, **Fu, C.C.**, Bharti, H., and Kumar, A., (2021). Decomposition of continuous soil–gas radon time series data observed at Dharamshala region of NW Himalayas, India for seismic studies. *Journal of Radioanalytical and Nuclear Chemistry*, 327, 1019-1035 <https://doi.org/10.1007/s10967-020-07575-x>

2020

3. **Fu, C.C.***, Lee, L.C., Ouzounov, D., and Jan, J.C., (2020) Earth's outgoing longwave radiation variability prior to $M \geq 6.0$ earthquakes in the Taiwan area during 2009-2019. *Frontiers in Earth Science* 8:364. <https://doi.org/10.3389/feart.2020.00364>
4. Kumar, A., Walia, V.*, Lin, S.J., and **Fu, C.C.**, (2020) Real-time database for geochemical earthquake precursory research. *Natural Hazards*, 104, 1359-1369. <https://doi.org/10.1007/s11069-020-04220-4>

2019

5. **Fu, C.C.***, Lee, L.C., Yang, T.F., Lin, C.H., Chen, C.H., Walia, V., Liu, T.K., Ouzounov, D., Giuliani, G., Lai, T.H., and Wang, P.K., (2019) Gamma ray and radon anomalies in northern Taiwan as a possible preearthquake indicator around the plate boundary. *Geofluids*, 2019, 4734513, 14 pages. doi.org/10.1155/2019/4734513

2018

6. Kumar, A., Walia, V.*, Sung, Y.C., Lin, S.J., **Fu, C.C.**, and Wen, K.L., (2018) Soil gas survey in and around Shanchiao fault of northern Taiwan for establishing continuous monitoring station. *Acta Geophysica*, 66(5), 1213-1221.
7. Kumar, A., Walia, V.*, Sung, Y.C., Lin, S.J., Lee, H.F., Lin, C.H., **Fu, C.C.**, and Chen, C-H, (2018) Integrated radon monitoring in Tatun Volcanic Areas of Northern Taiwan. *Terrestrial, Atmospheric and Oceanic Sciences*, 29(3), 1-13.

2017

8. Arora, B.R., Kumar, A., Walia, V.*, Yang, T.F., **Fu, C.C.**, Liu, T.K., Wen, K-L., and Chen, C-H, (2017) Assesment of the Response of the Meteorological/Hydrological Parameters on the Soil Gas Radon Emission at Hsinchu, Northern Taiwan: A Prerequisite to Identify Earthquake Precursors. *Journal of Asian Earth Sciences*, 149, 49-63.

9. **Fu, C.C.**, Walia, V.*, Yang, T.F., Lee, L.C., Liu, T.K., Chen, C.H., Kumar, A., Lai, T.H., and Wen, K.L., (2017) Preseismic anomalies in soil-gas radon associated with 2016 M6.6 Meinong earthquake, Southern Taiwan. *Terrestrial, Atmospheric and Oceanic Sciences*, 28(5), 787-798.
10. **Fu, C.C.***, Yang, T.F., Chen, C.H., Lee, L.C., Wu, Y.M., Liu, T.K., Walia, V., Kumar, A., and Lai, T.H., (2017) Spatial and temporal anomalies of soil gas in northern Taiwan and its tectonic and seismic implications. *Journal of Asian Earth Sciences*, 149, 64-77.
11. Yuce, G., **Fu, C.C.***, D'Alessandro, W., Gulbay, A.H., Lai, C.W., Bellomo, S., Yang, T.F., Italiano, F., and Walia, V., (2017) Geochemical characteristics of soil radon and carbon dioxide within the Dead Sea Fault and Karasu Fault in the Amik Basin (Hatay), Turkey. *Chemical Geology*, 469, 129-146. [dx.doi.org/10.1016/j.chemgeo.2017.01.003](https://doi.org/10.1016/j.chemgeo.2017.01.003).
12. **Fu, C.C.***, Yang, T.F., Tsai, M.C., Lee, L.C., Liu, T.K., Walia, V., Chen, C.H., Chang, W.Y., Kumar, A., and Lai, T.H., (2017) Exploring the relationship between soil degassing and seismic activity by continuous radon monitoring in the Longitudinal Valley of eastern Taiwan. *Chemical Geology*, 469, 163-175. [dx.doi.org/10.1016/j.chemgeo.2016.12.042](https://doi.org/10.1016/j.chemgeo.2016.12.042).

2016

13. Kumar, A., Walia, V.*, Yang, T.F., **Fu, C.C.**, Singh, S., Bajwa, B.S., and Arora V., (2016) Soil ²²²Rn concentration, CO₂ and CH₄ flux measurements around the Jwalamukhi area of north-west Himalayas, India, *Radiation Protection Dosimetry*, 1–5.

2015

14. Kumar, A., Walia, V.*, Arora, B.R., Yang, T.F., Lin, S.J., **Fu, C.C.**, Chen, C.-H., and Wen, K.L., (2015) Identifications and removal of diurnal and semidiurnal variations in radon time series data of Hsinhua monitoring station in SW Taiwan using singular spectrum analysis. *Nat Hazards*, 79,317–330.
15. **Fu, C.C.**, Wang, P.K., Lee, L.C.*, Lin, C.H., Chang, W.Y., Giuliani G., and Ouzounov, D., (2015) Temporal variation of gamma rays as a possible precursor of earthquake in the Longitudinal Valley of eastern Taiwan. *Journal of Asian Earth Sciences*, 114(2), 362-372.

2014

16. Yuce, G., Italiano, F.*, D'Alessandro W., Yalcin, T.H., Yasin, D.U., Gulbay, A.H., Ozyurt, N.N., Rojay, B., Karabacak, V., Bellomo, S., Brusca, L., Yang, T.F., **Fu, C.C.**, Lai, C.W., Ozacar, A., and Walia, V., (2014) Origin and interactions of fluids circulating over the Amik Basin (Hatay-Turkey) and relationships with the hydrologic, geologic and tectonic settings, *Chemical Geology*, 388, 23-39.

2013

17. Walia, V.*, Yang, T.F., Lin, S.-J., Kumar, A., **Fu, C.C.**, Chiu, J.-M., Chang, H.-H., Wen, K.-L., and Chen, C.-H., (2013) Temporal variation of soil gas compositions for earthquake surveillance in Taiwan. *Radiation Measurements*, 50, 154-159.

2012

18. Yang, T.F.*, Wen, H.Y., **Fu, C.C.**, Lee, H.F., Lan, T.F., Chen, A.T., Hong, W.L., Lin, S.J., and Walia, V., (2012) Soil radon flux and concentrations in hydrothermal area of the Tatun Volcano Group, Northern Taiwan. *Geochemical Journal*, 45, 483-490.

2010

19. Walia, V.*, Lin, S.J., **Fu, C.C.**, Yang, T.F., Wen, K.L., and Chen, C-H., (2010) Soil-gas monitoring: A tool for fault delineation studies along Hsinhua Fault (Tainan), Southern Taiwan. *Applied Geochemistry*, 25(4), 602-607.
20. Hong, W.L., Yang, T.F.*, Walia, V., Lin, S.J., **Fu, C.C.**, Chen, Y.G., Sano, Y., Chen, C-H., and Wen, K.L., (2010) Nitrogen as the carrier gas for helium emission along an active fault in NW Taiwan. *Applied Geochemistry*, 25(4), 593-601.

2009

21. Walia, V.*, Yang, T.F., Hong, W.L., Lin, S.J., **Fu, C.C.**, Wen, K.L., and Chen, C-H., (2009) Geochemical variation of soil-gas composition for fault trace and earthquake precursory studies along the Hsincheng Fault in NW Taiwan. *Applied Radiation and Isotopes*, 67, 1855-1863.
22. Walia, V.*, Lin, S.J., Hong, W.L., **Fu, C.C.**, Yang, T.F., Wen, K.L., and Chen, C-H., (2009) Continuous temporal soil-gas composition variations for earthquake precursory studies along Hsincheng and Hsinhua faults in Taiwan. *Radiation Measurements*. 44, 934-939.
23. **Fu, C.C.**, Yang, T.F.*, Walia, V., Liu, T.K., Lin, S.J., Chen, C-H., and Hou, C.S., (2009) Variations of soil gases around the active Chihshang Fault in a plate suture zone, eastern Taiwan. *Radiation Measurements*. 44, 940-944.

2008

24. **Fu, C.C.**, Yang, T.F.*, Du, J., Walia, V., Liu, T.K., Chen, Y.G., and Chen, C-H., (2008) Variations of helium and radon concentrations in soil gases from an active fault zone in southern Taiwan. *Radiation Measurements*, 43, 348-352.

2006

25. Yang, T.F.*, **Fu, C.C.**, Walia, V., Chen, C-H., Chyi, L.L., Liu, T.K., Song, S.R., Lee, M., Lin, C.W., and Lin, C.C., (2006) Seismo-geochemical variations in SW Taiwan: multi-parameter automatic gas monitoring results. *Pure and Applied Geophysics*, 163(4), 693-709.

2005

26. Yang, T.F.*, Walia, V., Chyi, L.L., **Fu, C.C.**, Chen, C-H., Liu, T.K., Song, S.R., Lee, C.Y., and Lee, M., (2005) Variations of soil radon and thoron concentrations in a fault zone and prospective earthquakes in SW Taiwan. *Radiation Measurements*, 40, 496-502.
27. Yang, T.F.*, Lan, T.F., Lee, H.F., **Fu, C.C.**, Chuang, P.C., Lo, C.H., Chen, C-H., Chen, C.T.A., and Lee, C.S., (2005) Gas compositions and helium isotopic ratios of fluid samples around Kueishantao, NE

offshore Taiwan and its tectonic implications. *Geochemical Journal*, 39, 469-480.

28. Walia, V.*, Su, T.C., **Fu, C.C.**, and Yang, T.F., (2005) Spatial variations of radon and helium concentrations in soil gas across the Shan-Chiao fault, Northern Taiwan. *Radiation Measurements*, 40, 513-516.
29. **Fu, C.C.**, Yang, T.F.*, Walia, V., and Chen, C-H., (2005) Reconnaissance of soil gas composition over the buried fault and fracture zone in southern Taiwan. *Geochemical Journal*, 39, 427-439.

2004

30. Yang, T.F.*, Yeh, G.H., **Fu, C.C.**, Wang, C.C., Lan, T.F., Lee, H.F., Chen, C-H., Walia, V., and Sung, Q.C., (2004) Composition and exhalation flux of gases from mud volcanoes in Taiwan. *Environmental Geology*, 46, 1003-1011.

Non-SCI Journal and book chapter:

1. Walia, V.*, Kumar, A., **Fu, C.C.**, Hong, W.L., and Yang, T.F., (2020) Study of Fault Traces in Taiwan Using Soil-Gas Geochemistry: An Overview. *Radon: Detection, Exposure and Control, NOVA SCIENCE PUBLISHERS*. 45-78.
2. **Fu, C.C.*** and L.C. Lee, (2018) Continuous monitoring of fluid and gas geochemistry for seismic study in Taiwan. *Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, Geophysical Monograph Series 234*, 199-218.

Others

1. 林世榮、瓦里亞、楊燦堯、**傅慶州** (2006) 地震前兆研究 (地球化學觀測)。國研科技，第10期，46-52頁。
2. **傅慶州**、楊燦堯、陳正宏 (2004) 利用土壤逸氣調查掩覆斷層及破裂帶可能分佈：以潮州斷層為例。經濟部中央地質調查所特刊，第十五號，147-160頁。
3. 魏稽生、嚴治民、林國隆、林永祥、**傅慶州**、張阡肇、李桂淑、陳柏村 (2002) 地理資訊系統應用於花蓮縣平地(農地)砂石資源規劃區之評選。華岡地理學報，第十五期，89-109頁。
4. 魏稽生、嚴治民、邱南殼、林永祥、**傅慶州**、張阡肇 (2001) 台東縣農地砂石資源規劃區之調查評選。華岡理科學報，第十八期，21-46頁。
5. 魏稽生、嚴治民、邱南殼、**傅慶州**、張阡肇、林永祥 (2001) 骨材分析報告。亞東預拌混凝土股份有限公司，共25頁。

Theses

1. **Fu, C.C.** (2012), Continuous monitoring of soil gas geochemistry for seismic precursory study in Taiwan and its tectonic implications, National Taiwan University, Ph.D. thesis. (in English)
2. **Fu, C.C.** (2006), Recognition of buried fault and/or fracture by soil gas method: an example of the Chaochou Fault, National Taiwan University, Master thesis. (in Chinese)

Conference abstracts (since 2016~)

1. **Ching-Chou Fu***, Lou-Chuang Lee, Dimitar Ouzounov, and Jyh-Cherng Jan (2020). Earth's outgoing longwave radiation variability prior to $M \geq 6.0$ earthquakes in the Taiwan area during 2009-2019. Abstract for the 109 Annual Conference of Chinese Taipei Geophysical Society & Geological Society Located in Taipei, Taipei, November 17-18, 2020.
2. **Ching-Chou Fu***, and Kuo-Chen Kao (2020). Developing multidimensional geochemical and hydrological observations for exploration of earthquake generation process. Abstract for the 109 Annual Conference of Chinese Taipei Geophysical Society & Geological Society Located in Taipei, Taipei, November 17-18, 2020.
3. **Fu, C.C.***, Lee, L.C., and Ouzounov, D., (2020). Earth's outgoing longwave radiation variability prior to $M \geq 6.0$ earthquakes in the Taiwan area during 2009-2016. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, July 12-16, 2020. (Oral)
4. Vivek Walia*, Arvind Kumar, **Ching-Chou Fu**, Shih-Jung Lin, and Cheng-Horng Lin (2020). Application of different statistical tools to investigate radon time-series data for earthquake precursory studies in Taiwan. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, July 12-16, 2020. (Oral)
5. **Fu, C.C.***, Lee, L.C., and Lin, C.H., (2020). The dynamic processes of hydrothermal activity related to seismicity in the Tatun Volcano group of Taiwan: Evidences from multi-observations. Abstract for the Goldschmidt, Hawaii, USA, June 21-26.
6. **Fu, C.C.**, Lai, C.W., Yang, T.F., Chen, C.H., and Ma, K.F., (2019) High-resolution variations of gas and fluid geochemistry from the Taiwan Chelungpu-fault borehole before the 2013 M6.2 Nantou earthquake. Abstract for the 15th International Conference on Gas Geochemistry 2019, Palermo & Milazzo, Italy, September 30 to October 5, 2019. (Oral)
7. **Fu, C.C.***, Yang, T.F., Lee, L.C., Walia, V., Chen, C.H., and Lin, C.H., (2019). Gas geochemistry applied to earthquake precursor in Taiwan: Recent status and future scenarios. Abstract for the International Conference in Commemoration of 20th Anniversary of the 1999 Chi-Chi Earthquake Taipei, Taiwan, September 15-19, 2019. (Oral)
8. Vivek Walia*, Arvind Kumar, **Ching-Chou Fu**, Shih-Jung Lin and Cheng-Horng Lin (2019). Tectonic Implications of Soil-gas Monitoring for Earthquake Surveillance in Taiwan. International Conference in Commemoration of the 20th Anniversary of the 1999 Chi-Chi Earthquake, Taipei, Taiwan, September 15-19, 2019. (Oral)

9. **Fu, C.C.** (2019). Applications of gas geochemistry in geosciences. A Seminar at the Lanzhou Center for Oil and Gas Resources, Institute of Geology and Geophysics, CAS. Lanzhou, China, September 13, 2019. **(Invited Talk)**
10. **Fu, C.C.***, Lee, L.C., Yang, T.F., Lin, C.H., Walia, V., and Chen, C.H., (2019). Exploring the release of radioactive gas in the volcanic area and its tectonic implications. Abstract for the 2nd Symposium on Gas Isotope Technique and Geosciences Applications, Lanzhou, China, September 8-11, 2019. **(Invited Talk)**
11. **Fu, C.C.***, Lee, L.C., Yang, T.F., Lin, C.H., Walia, V., and Chen, C.H., (2019). Exploring the release of radioactive gas in the volcanic area and its tectonic implications. Abstract for the 17th Japan-Taiwan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Tsukuba, Japan, September 3, 2019. **(Oral)**
12. **Fu, C.C.**, Lai, C.W., Yang, T.F., Chen, C.H., and Ma, K.F., (2019) Changes in gas and fluid geochemistry in the Chelungpu fault zone before the 2013 M6.2 Nantou earthquake. Abstract for the 6th International Workshop on Earthquake Preparation Process 2019, Chiba, Japan, May 31 to June 1, 2019. **(Invited Talk)**
13. **Fu, C.C.**, Lee, L.C., Lin, C.H., Walia, V., and Ouzounov, D., (2019). Geochemical evidence for the occurrence of 2018 Hualien earthquake triggered by earlier earthquake swarm. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, May 26-30, 2019. **(Oral)**
14. **Fu, C.C.**, Yuce, G., D'Alessandro, W., Bellomo, S., Italiano, F., Lai, C.W., Yang, T.F., and Walia, V., (2019) Characteristics and origins of gas geochemistry around the Amik Basin, SE Turkey and its tectonic implications. Abstract for the 2019 Taiwan Geosciences Assembly, May 14-17, 2019. **(Oral)**
15. **Fu, C.C.**, Lai, C.W., Yang, T.F., Chen, C.H., and Ma, K.F., (2019) Changes in gas and fluid geochemistry at the Taiwan Chelungpu Fault Borehole before the 2013 M6.2 Nantou earthquake. Abstract for the 17th Annual Conference of the Chinese Society for Mineralogy, Petrology and Geochemistry, Zhejiang, Hangzhou, April 19-22, 2019. **(Invited Talk)**
16. Vivek Walia*, Arvind Kumar, **Ching-Chou Fu**, Shih-Jung Lin and Kuo-Liang Wen (2019). Implication of Earthquake Precursory Studies in Taiwan with Special Emphasis on Soil-gas Radon Measurements. Presented at General Assembly 2019 of European Geosciences Union, Vienna, Austria, April 7-12, 2019. **(Oral)**.
17. Ouzounov, D., Pulinets, S., Karastathis, V., Eleftheriou, G., Lee, L.C., **Fu, C.C.**, Hattori, K., Papillion, A., Tsinganos, K., and Kafatos, M., (2019) The role of radon and other geogas in the Lithosphere-Atmosphere –Ionosphere Coupling associated with pre-earthquake processes. Abstract for the General Assembly 2019 of European Geosciences Union, Vienna, Austria, April 7-12, 2018.
18. Ouzounov, D., Pulinets, S., Lee, L.C., **Fu, C.C.**, Karastathis, V.K., Tsinganos, K., Kafatos, M., Hatzopoulos, N., Eleftheriou, G., and Hattori, K. (2018) Experimental study of Radon activity associated with pre-earthquake phenomena observed in the Earth atmosphere-ionosphere environment. Abstract for the EMSEV (Electro-Magnetic Studies of Earthquakes and Volcanoes) 2018, Potenza Italy, September 17-21.

19. **Fu, C.C.**, Lai, C.W., Yang, T.F., Ma, K.F., and Lee, L.C., (2018) Anomalous fluid emission at the Taiwan Chelungpu Fault Borehole associated with the 2013 M6.2 Nantou earthquake. Abstract for the Goldschmidt, Boston, USA, August 12-17.
20. **Fu, C.C.**, Lai, C.W., Yang, T.F., Walia, V., Chen, C.H., Ma, K.F., and Lee, L.C., (2018) Changes in groundwater chemistry at the Taiwan Chelungpu Fault Borehole before the 2013 M6.2 Nantou earthquake in central Taiwan. Abstract for the Asia Oceania Geosciences Society 13th Annual Meeting, Honolulu, Hawaii, June 3-8. **(Oral)**
21. L.C. Lee and **Fu C.C.** (2018) Seismic retrofit project for school buildings and integrated observations of earthquake precursors in Taiwan. Abstract for the International Conference on Continental Earthquakes 2018, Chengdu China, May 12-14. **(Oral)**
22. Ouzounov, D., Pulinets, S., Lee, L.C., Giuliani, G., **Fu, C.C.**, Karastathis, V.K., Tsinganos, K., Kafatos, M., Eleftheriou, G., and Hattori, K. (2018) Radon activity - the hidden driver behind pre-earthquake anomalies in the Earth atmosphere-ionosphere environment. Abstract for the General Assembly 2018 of European Geosciences Union, Vienna, Austria, April 8-13, 2018.
23. **Fu, C.C.**, Lee, L.C., Yang, T.F., Wang, P.K., Lin, C.H., Walia, V., Chen, C-H, Kumar, A. (2017) Radon and gamma rays anomalies in northern Taiwan and its tectonic implications. Abstract for the 14th International Conference on Gas Geochemistry 2017, Wrocław-Świeradów, Poland, September 24-28. **(Oral)**
24. **Fu, C.C.**, Lee, L.C., Yang, T.F., Lin, C.H., Chen, C-H, and Walia, V. (2017) Anomalous radon and gamma rays changes of major earthquake in northern Taiwan. Abstract for the International Workshop of Technology of Earthquake Monitoring and Geophysical data Analysis Application and The 16th Japan-Taiwan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Taipei, Taiwan, September 5-6. **(Oral)**
25. **Fu, C.C.**, Yang, T.F., Lee, L.C., Walia, V., Chen, C-H, and Lin, C.H. (2017) Gas geochemistry applied to earthquake precursor in Taiwan: Recent status and future scenarios. Abstract for the 1st Symposium on Gas Isotope Technique and Geosciences Applications, Lanzhou, China, August 22-25. **(Keynote Speech)**
26. **Fu, C.C.**, Yang, T.F., Tsai, M.C., Lee, L.C., Liu, T.K., Walia, V., Chen, C.H., Chang, W.Y., and Lai, T.H. (2017) Exploring the relationship between soil degassing and seismic activity by continuous radon monitoring in the Longitudinal Valley of eastern Taiwan Abstract for International Workshop on Earthquake Preparation Process 2017, Chiba, Japan, May 25-26. **(Invited Speaker)**
27. Lee, L.C., **Fu, C.C.**, Ho, Y.Y., Jhuang, H.K., Kuo, C.L. (2017) Observations of earthquake precursors in Taiwan and comparisons between observations and model calculations. Abstract for International Workshop on Earthquake Preparation Process 2017, Chiba, Japan, May 25-26. **(Invited Talk)**

28. **Fu, C.C.**, Lee, L.C., Yang, T.F., Wang, P.K., Liu, T.K., Walia, V., Chen, C-H, Lin, C.H., Giuliani, G., and Ouzounov, D. (2017) Implications of radon and gamma rays in northern Taiwan. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, May 20-24. **(Invited Speaker)**
29. Lee, L.C., **Fu, C.C.**, (2017) Integrated observations of earthquakes precursors in Taiwan. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, May 20-24. **(Invited Talk)**
30. Walia, V., Kumar, A., **Fu, C.C.**, Lin, S.J., Chou, K.W., Wen, K.L., and Chen, C.H. (2017) Earthquake forecasting studies using radon time series data in Taiwan. Presented at General Assembly 2017 of European Geosciences Union, Vienna, Austria, April 23-28, 2017.
31. **Fu, C.C.**, Lee, L.C., Yang, T.F., Wang, P.K., Liu, T.K., Walia, V., Chen, C-H, Lin, C.H., T.H., Lai, Giuliani, G., and Ouzounov, D. (2016) Temporal changes in gas geochemistry and gamma rays as a precursor of the 2016 M6.6 Meinong earthquake, southern Taiwan. Abstract for the 15th Japan-Taiwan International Workshop on Hydrological and Geochemical Research for Earthquake Prediction, Tsukuba, Japan, September 7. **(Invited Speaker)**
32. **Fu, C.C.**, Lai, C.W., Yang, T.F., Hilton, D.R., Liu, T.K., Walia, V., Chen, C-H., Lee, L.C., and Lai, T.H. (2016) Continuous sampling and monitoring of groundwater geochemistry at an active fault zone in SW Taiwan. Abstract for the Asia Oceania Geosciences Society 13th Annual Meeting, Beijing, China, July 31- August 5.
33. **Fu, C.C.**, Lai, C.W., Yang, T.F., Hilton, D.R., Liu, T.K., Walia, V., Chen, C-H., Lee, L.C., and Lai, T.H. (2016) An automatic system for continuous monitoring of groundwater geochemistry at an active fault zone in SW Taiwan. Abstract for the Goldschmidt, Yokohama, Japan, June 26- July 1.
34. **Fu, C.C.**, Yang, T.F., Lai, C.W., Liu, T.K., Walia, V., Chen, C-H., Ma, K.F., Lee, L.C., and Lai, T.H. (2016) Precursory gas geochemical and hydrogeological anomalies associated with the M6.2 Earthquake of 27 March 2013 in central Taiwan. Abstract for International Workshop on Earthquake Preparation Process 2016, Chiba, Japan, May 27-28. **(Invited Speaker)**
35. **Fu, C.C.**, Lee, L.C., Yang, T.F., Wang, P.K., Liu, T.K., Walia, V., Chen, C-H, Lin, C.H., T.H., Lai, Giuliani, G., and Ouzounov, D. (2016) Precursory gas geochemical and gamma rays anomalies prior to the 2016 M6.4 Meinong earthquake, southern Taiwan. Abstract for the Japan Geoscience Union Meeting, Chiba, Japan, May 22-26. **(Invited Speaker)**
36. **Fu, C.C.**, Lee, L.C., Yang, T.F., Wang, P.K., Liu, T.K., Walia, V., Chen, C-H, Lin, C.H., T.H., Lai, Giuliani, G., and Ouzounov, D. (2016) Radon and gamma rays anomalies observed in northern Taiwan: a possible connection with the seismicity near the subduction zone. 2016 International mini Workshop on Earthquake Precursors, Taiwan, January 20-21. **(Invited Speaker)**