

**Publication List: Geoenergy Group**  
**Centro de Investigación en Energía, UNAM**  
**Temixco, Mor., Mexico.**  
**1996-2006**

Updated: 30 June, 2006

***ACADEMIC PERSONNEL***

**Investigators:**

**Surendra P. Verma:** Since 14 February, 1995. [spv@cie.unam.mx](mailto:spv@cie.unam.mx)

**Ignacio Torres Alvarado:** Since 1<sup>st</sup> February, 1997. [ita@cie.unam.mx](mailto:ita@cie.unam.mx)

**Edgar Santoyo Gutiérrez:** Since 1<sup>st</sup> August, 1998. [esg@cie.unam.mx](mailto:esg@cie.unam.mx)

**Pandarinath Kailasa:** Since 30 June, 2003. [pk@cie.unam.mx](mailto:pk@cie.unam.mx)

***Not currently on the staff of the Geoenergy Group:***

**Alan D. Smith:** 1<sup>st</sup> May, 2002 - 31 December, 2003.

**Post doctoral fellows:**

**Hetu C. Sheth:** 1<sup>st</sup> January - 31 December 2000.

**John Armstrong Altrim Sam:** 6 February 2002 - 5 February, 2004.

**Yali Sun:** 12 September, 2003 – 11 August 2004.

**Academic Technicians:**

**Mirna Guevara García:** Since 1<sup>st</sup> August, 1997. [mygg@cie.unam.mx](mailto:mygg@cie.unam.mx)

**Ph. D. Students:**

***Thesis completed -***

**Álvaro Márquez González** (*Geosciences - Geology*): **September 1995 – April 1999** (External Student: **Degree conferred in April 1999 by Universidad Complutense de Madrid, Spain**).

**Fernando Velasco Tapia** (*Geosciences - Geochemistry*): **September 1997 – October 2001** (**Degree conferred on 23 Nov. 2001 by UNAM – Institute of Geology, Mexico City**).

***Thesis in preparation -***

**Pedro Sánchez Upton** (*Energy Engineering – Geothermics*): **Started September 2001.**

**Jorge Andaverde Arredondo** (*Geosciences – Computer Modeling*): **Started February 2002.**

**Lorena Díaz González** (*Energy Engineering – Geothermics*): **Started September 2005.**

**Rosalinda González Ramírez** (*Energy Engineering – Geothermics*): **Started January 2006.**

**Master's Students:**

Thesis completed -

**Aida Quinto Estrada** (*Energy Engineering - Geothermics*): **June 2002 – October 2004** (Degree conferred on **13 Oct. 2004** by Faculty of Engineering-UNAM, Mexico City).

**Lorena Díaz González** (*Informatics*): **November 2003 – August 2005** (Degree conferred on **26 August 2005** by ITZ, Zacatepec).

Thesis in preparation -

**Hypitia Palacios Berruete** (*Informatics*).

**Alondra Galicia Alanis** (*Energy Engineering - Geothermics*).

**Fredy Hernández Coronado** (*Geology*).

**Orlando Miguel Espinoza Ojeda** (*Energy Engineering - Geothermics*).

**Bachelor's Students:**

Thesis completed -

**Rosalía Ciriaco Villanueva** (*Informatics*): Completed **June 1997**.

**Leonides Javier Orduña Galván** (*Informatics*): Completed **October 1997**.

**Oriana Yuridia González Castillo** (*Informatics*): Completed **March 1998**.

**José Manuel Vasconcelos Fernández** (*Mineralogy*): Completed **April 1998**.

**Juan Francisco Rodríguez García** (*Mineralogy*): Completed **September 1998**.

**Edgar Ricardo Rosales Arriaga** (*Informatics*): Completed **September 1999**.

**Zulma Teresa Sotelo Rodríguez** (*Informatics*): Completed **January 2000**.

**Pedro Luis Maldonado Aranda** (*Geology*): Completed **February 2000**.

**Roberto Hernández Ramos** (*Informatics*): Completed **June 2000**.

**Rosa Carmen Vargas Ballesteros** (*Mineralogy*): Completed **October 2000**.

**Hermila Arteaga Díaz** (*Informatics*): Completed **November 2000**.

**Mayra López Alquicira** (*Informatics*): Completed **December 2000**.

**Cristina Brito Bahena** (*Informatics*): Completed **February 2001**.

**Hypitia Palacios Berruete** (*Informatics*): Completed **March 2001**.

**Fredy Hernández Coronado** (*Geology*): Completed **August 2004**.

**Visiting Scientists:**

**Francisco Anguita Virella** (Universidad Complutense, Spain): **July - August, 1997;**  
**10 June – 10 July, 2003.**

**Arturo Martín Barajas** (CICESE, Mexico): **August-September, 1999.**

**Karsten Storetvedt** (Bergen University, Norway): **3 – 7 July, 2000.**

**Allan D. Smith** (National Cheng Kung University, Taiwan): **11 September – 4 December, 2000.**

**Philip J. Potts** (Open University, United Kingdom): **14 – 28 October, 2000.**

**Rodolfo Rodríguez Ríos** (Universidad Autónoma de San Luis Potosí, Mexico): **7 – 15 January, 2004.**

**John Armstrong Altrim Sam** (Universidad Autónoma del Estado de Hidalgo, Mexico): **June 2004.**

**Giuliana Ratti** (Universidade de São Paulo, Brazil): **30 January–3 February, 2006.**

**Laboratory facilities:**

**Capillary Electrophoresis Instrument equipped with Ultraviolet/Visible (UV/Vis), Photo Diode Array (PDA), and Laser-Induced Fluorescence (LIF) detectors, Beckman-Coulter** - for use in major and trace element analysis of geological samples (water, rock, soil, inorganic or organic pollutants, etc.).

**X-Ray Fluorescence Spectrometer equipment with 4 kW Rh X-ray tube (calibration under progress, likely to be accomplished by the March 2006), Philips** - for use in major and trace element analysis of geological samples (rock, soil, inorganic pollutants, etc.).

## PUBLICATIONS

Only published and accepted papers are listed here chronologically, according to the category of the publication medium.

### PUBLICATIONS IN SCIENCE CITATION INDEX (SCI) JOURNALS

#### 1996

1996-1. Jochum, K. P. and **Verma, S. P.** (1996) Extremely high enrichment of Sb, Tl and other trace elements in altered MORB. *Chemical Geology*, **130**: 289-299.

#### 1997

1997.1. Birkle, P., Torres-Rodríguez, V., González-Partida, E., y **Guevara-García, M.** (1997) Sustrato geológico y su papel en el escurrimiento superficial y los acuíferos en el campo geotérmico de Los Azufres, México. *Ingeniería Hidráulica en México*, **12**: 37-48.

1997.2. Nieva, D., Verma, M. P., **Santoyo, E.**, Portugal, E., and Campos, A. (1997) Geochemical exploration of the Chipilapa geothermal field, El Salvador. *Geothermics*, **26** (5/6): 589-612.

1997.3. **Verma, S. P.** (1997) Sixteen statistical tests for outlier detection and rejection in evaluation of International Geochemical Reference Materials: Example of microgabbro PM-S. *Geostandards Newsletter: The Journal of Geostandards and Geoanalysis*, **21** (1): 59-75.

1997.4. **Verma, S. P.** and Rodríguez-González, U.\* (1997) Temperature field distribution from cooling of a magma chamber in La Primavera caldera, Jalisco, Mexico. *Geothermics*, **26**: 25-42.

[\* was a  **bachelor student in our group**]

1997.5. **Verma, S. P.** and **Santoyo, E.** (1997) Improved equations for Na/K, Na/Li, and SiO<sub>2</sub> geothermometers by outlier detection and rejection. *Journal of Volcanology and Geothermal Research*, **79**: 9-23.

#### 1998

- 1998.1. García, A., Hernández, I., Espinosa, G., and **Santoyo, E.** (1998) TEMLOPI: A thermal simulator for estimation of drilling mud and formation temperatures during drilling of geothermal wells. *Computers & Geosciences*, **24** (5): 465-477.
- 1998.2. García, A., **Santoyo, E.**, Espinosa, G., and Hernández, I. (1998) Estimation of Temperatures in Geothermal Wells During Circulation and Shut-in in the Presence of Lost Circulation. *Transport in Porous Media*, **33** (1-2): 103-127.
- 1998.3. Moya, S.L., Aragon, A., Iglesias, E., and **Santoyo, E.** (1998) Prediction of mass eliverability from a single wellhead measurement and geothermal inflow performance reference curves. *Geothermics*, **27** (3): 317-329.
- 1998.4. Navarro-L., I.\*, **Verma, S. P.**, and García Cacho, L. (1998) Mineralogy and major element modelling of volcanic rocks from Amealco caldera, Querétaro, Mexico. *Chemie der Erde*, **58**: 249-270.

[\* was a bachelor student in our group]

- 1998.5. Velasco, F.\* and **Verma, S. P.** (1998) Importance of skewness and kurtosis statistical tests for outlier detection and elimination in evaluation of Geochemical Reference Materials. *Mathematical Geology*, **30**: 109-128.

[\* was a doctoral student in our group]

- 1997.6. **Verma, S. P.**, Ciriaco-Villanueva R.\*, and **Torres-Alvarado I. S.** (1998) SIMOCF: modeling fractional crystallization using a Monte Carlo approach. *Computers & Geosciences*, **24**: 1011-1017.

[\* was a bachelor student in our group]

- 1997.7. **Verma, S. P.**, Orduña-Galván, L. J.\*, and **Guevara, M.** (1998) SIPVADE: A new computer program with seventeen statistical tests for outlier detection and rejection in evaluation of International Geochemical Reference Materials and its application to Whin Sill dolerite WS-E from England and Soil-5 from Peru. *Geostandards Newsletter: The Journal of Geostandards and Geoanalysis*, **22**: 209-234.

[\* was a bachelor student in our group]

## 1999

- 1999.1. Márquez, A.\*, Oyarzun, R., Doblás, M., and **Verma, S. P.** (1999) Alkalic (ocean-island basalt type) and calc-alkalic volcanism in the Mexican volcanic belt: a case of plume-related magmatism and propagating rifting at an active margin? *Geology*, **27**: 51-54.

[\* was a doctoral student in our group]

- 1999.2. Márquez, A.\*, Oyarzun, R., Doblás, M., and **Verma, S. P.** (1999) Reply (to Comment by L. Ferrari and J. Rosas Elguera on) Alkalic (ocean-island basalt type) and calc-alkalic volcanism in the Mexican volcanic belt: a case of plume-related magmatism and propagating rifting at an active margin? Comment and Reply. *Geology*, **27** (11): 1055-1056.

[\* was a doctoral student in our group]

- 1999.3. Márquez, A.\*, **Verma, S. P.**, Anguita, F., Brandle, J. L., and Oyarzun, R. (1999) Tectonics and volcanism of Sierra Chichinautzin: Extension at the front of the Central Trans-Mexican Volcanic Belt. *Journal of Volcanology and Geothermal Research*, **93**: 125-150.

[\* was a doctoral student in our group]

- 1999.4. Santoyo-Gutiérrez, S., Siqueiros, J., Heard, C. L., **Santoyo, E.**, and Holland, F. A. (1998) An Experimental Integrated Absorption Heat Pump Effluent Purification System. Part I: Operating on water/lithium bromide solutions, *Applied Thermal Engineering*, **19** (5): 461-475.
- 1999.5. **Verma, S. P.** (1999) Geochemistry of evolved magmas and their relationship to subduction-unrelated mafic volcanism at the volcanic front of the central Mexican Volcanic Belt. *Journal of Volcanology and Geothermal Research*, **93**: 151-171.
- 1999.6. **Verma, S. P.** (1999) Preface “Rift-Related Volcanism: Geology, Geochemistry and Geophysics”. Special Issue of the journal “*Journal of Volcanology and Geothermal Research*” **93**, 15 November 1999, Elsevier.

## 2000

- 2000.1 Chandrasekharam, D., Vaselli, O., **Sheth, H. C.**, and Keshav, S. (2000) Petrogenetic significance of ferro-enstatite orthopyroxene in basaltic dikes from the Tapi rift, Deccan flood basalt province, India. *Earth and Planetary Science Letters*, **179**: 469-476.
- 2000.2 González-Partida, E., Birkle, P., and **Torres-Alvarado, I. S.** (2000) Evolution of the hydrothermal system at the Los Azufres, México, based on petrologic, fluid inclusion and isotopic data. *Journal of Volcanology and Geothermal Research*, **104**(1-4): 277-296.
- 2000.3 Mahoney, J. J., **Sheth, H. C.**, Chandrasekharam, D., and Peng, Z. X. (2000) Geochemistry of flood basalts of the Toranmal section, northern Deccan Traps, India: implications for regional Deccan stratigraphy. *Journal of Petrology*, **41** (7): 1099-1120.
- 2000.4 **Santoyo, E.**, García, A., Espinosa, G., Hernández, I., and Santoyo, S. (2000) STATIC\_TEMP: A useful computer code for calculating static formation temperatures in geothermal wells. *Computers & Geosciences*, **26** (2): 201-217.
- 2000.5 **Santoyo, E.**, Santoyo-Gutiérrez, S., and **Verma, S. P.** (2000) Trace analysis of major heavy metals in groundwater samples by ion chromatography with post-column reaction and ultraviolet-visible detection. *Journal of Chromatography A*, **884** (1-2): 229-241.
- 2000.6 Santoyo-Gutiérrez, S., Siqueiros, J., Heard, C. L., **Santoyo, E.**, and Holland, F.A. (2000) An Experimental Integrated Absorption Heat Pump Effluent Purification System. Part II: operating on water/carrol solutions. *Applied Thermal Engineering*, **20** (3): 269-284.
- 2000.7 **Sheth, H. C.** (2000) The timing of crustal extension, diking, and eruption of the Deccan flood basalts. *International Geology Review*, **42** (11): 1007-1016.
- 2000.8 **Sheth, H.C.**, **Torres-Alvarado, I. S.**, and **Verma, S. P.** (2000) Beyond subduction and plumes: a unified tectonic-petrogenetic model for the Mexican Volcanic Belt. *International Geology Reviews*, **42** (12):1116-1132.

2000.9 **Torres-Alvarado, I. S., Verma, S. P.,** and Carrasco-Núñez, G. (2000) Compilation of radiogenic isotope data in Mexico and their petrogenetic implications. *Proceedings of the Indian Academy of Sciences (Earth and Planetary Sciences)*, **109** (1): 67-78.

2000.10 Velasco, F.\*, **Verma, S. P.,** and **Guevara, M.** (2000) Comparison of the performance of fourteen statistical tests for detection of outlying values in geochemical reference material databases. *Mathematical Geology*, **32** (4): 439-464.

[\* was a doctoral student in our group]

2000.11 **Verma, S. P.** (2000) Error propagation in equations for geochemical modeling of radiogenic isotopes in two-component mixing. *Proceedings of the Indian Academy of Sciences (Earth and Planetary Sciences)*, **109** (1): 79-88.

2000.12 **Verma, S. P.** (2000) Geochemical evidence for a lithospheric source for magmas from Los Humeros caldera, Puebla, Mexico. *Chemical Geology*, **164**: 35-60.

2000.13 **Verma, S. P.,** García R., **Santoyo E.,** and Aparicio A. (2000) Improved capillary electrophoresis for measuring rare-earth elements in synthetic geochemical standards. *Journal of Chromatography A* **884** (1-2): 317-328.

## 2001

2001.1 Anguita, F., **Verma, S. P.,** Márquez, A.\*, Vasconcelos-F., M, López-Ruiz, I., and Laurieta, A. (2001) Circular features in the Trans-Mexican Volcanic Belt. *Journal of Volcanology and Geothermal Research*, **107** ( ): 265-274.

[\* was a doctoral student in our group]

2001.2 Barragán Reyes, R.M., **Torres-Alvarado, I. S.,** Ascencio, F., Arellano, V., Portugal Marín, E., and Martínez, A. (2001) Equilibrio químico y grado de saturación de minerales en aguas de pozos petroleros del Activo Luna, Tabasco, México. *Ingeniería Hidráulica en México*, **16** (3): 113-125.

2001.3 Birkle, P., Merkel, B., Portugal, E., and **Torres-Alvarado, I. S.** (2001) The origin of reservoir fluids at the geothermal field of Los Azufres, Mexico - Isotopical and hydrological indications. *Applied Geochemistry*, **16** (14): 1595-1610.

2001.4 Espinosa, G., García, A., **Santoyo, E.,** and Hernández, I. (2001) TEMLOPI/V2.0: a computer program for estimation of temperatures in geothermal wells during circulation and shut-in. *Computers & Geosciences*, **27** (3): 329-346.

2001.5 **Santoyo, E.,** Santoyo-Gutiérrez, S., García, A., Espinosa, G., and Moya, S. L. (2001) Rheological property measurement of drilling fluids used in geothermal wells. *Applied Thermal Engineering*, **21** (3): 283-302.

2001.6 **Santoyo, E.,** García, A., Morales, J. M., Contreras, E., and Espinosa, G. (2001) Effective thermal conductivity of Mexican geothermal cementing systems in the temperature range from 28 to 200 °C. *Applied Thermal Engineering*, **21** (17): 1799-1812.

2001.7 **Santoyo, E.**, García, R., Abella, R., Aparicio, A., and **Verma, S. P.** (2001) Capillary electrophoresis for measuring major/trace anions in thermal water and condensed steam samples from hydrothermal springs and fumaroles. *Journal of Chromatography A*, **920** (1/2): 325-332.

2001.8 Velasco-Tapia, F.\*, and **Verma, S. P.** (2001) First partial melting inversion model for a rift-related origin of Sierra de Chichinautzin volcanic field, central Mexican Volcanic Belt. *International Geology Review*, **43** (9): 788-817.

[\* was a doctoral student in our group]

2001.9 Velasco-Tapia, F.\*, **Guevara, M.**, **Verma, S. P.** (2001) Evaluation of concentration data in Geochemical reference materials. *Chemie der Erde*, **61** (2), 69-91.

[\* was a doctoral student in our group]

2001.10 **Verma, S. P.** (2001) Geochemical evidence for a lithospheric source for magmas from Acoculco caldera, eastern Mexican Volcanic Belt. *International Geology Review*, **43** (6), 31-51.

2001.11 **Verma, S. P.** (2001) Geochemical and Sr-Nd-Pb isotopic evidence for the petrogenesis of volcanic rocks from Huichapan caldera, Hidalgo, Mexico. *Lithos*, **56**: 141-164.

2001.12 **Verma, S. P.** (2001) Geochemical evidence for a rift-related origin of bimodal volcanism at Meseta Río San Juan, North-Central Mexican Volcanic Belt. *International Geology Review*, **43** (6): 475-493.

## 2002

2002.1 Espinosa, G., García, A., **Santoyo, E.**, Contreras, E., and Morales, J. M. (2002) Thermal property measurement of Mexican geothermal cementing systems using an experimental technique based on the Jaeger method. *Applied Thermal Engineering*, **22** (3): 279-294.

2002.2 **Santoyo, E.**, **Verma, S. P.**, Sandoval, F., Aparicio, A., and García, R. (2002) Suppressed ion chromatography for monitoring chemical impurities in steam for geothermal power plants. *Journal of Chromatography A*, **949** (1-2): 281-289.

2002.3 **Santoyo, E.**, García, R., Martínez-Frías, J., López-Vera, F., and **Verma, S. P.** (2002) Capillary electrophoresis analysis of inorganic anions in atmospheric hailstone samples. *Journal of Chromatography A*, **956** (1-2): 279-286.

2002.4 **Sheth, H. C.**, **Torres-Alvarado, I. S.**, and **Verma, S. P.** (2002) What is the 'calc-alkaline' rock series?. *International Geology Review*, **44** (8): 686-701.

2002.5 **Smith A. D.** and Thorkelson, D. (2002) Geochemical and Nd-Sr-Pb isotopic evidence on the origin and geodynamic evolution of mid-Cretaceous continental arc volcanic rocks of the Spences Bridge Group, south-central British Columbia. *Geological Journal*, **37**: 167-186.

2002.6 **Torres-Alvarado, I. S.** (2002) Chemical equilibrium in hydrothermal systems: The case of the Los Azufres geothermal field, Mexico. *International Geology Review*, **44** (7): 639-652.

2002.7 **Torres-Alvarado, I. S., Verma, S. P.,** and Velasco-Tapia, F.\* (2002) Comment to “Generation of oceanic-island basalt type volcanism in the western Trans-Mexican volcanic belt by slab rollback, asthenosphere infiltration, and variable flux-melting” by L. Ferrari, C.M. Petrone, L. Francalanci. *Geology*, **30** (9): 857-858.

[\* was a doctoral student in our group]

2002.8 **Verma, S. P.** (2002) Absence of Cocos plate subduction-related basic volcanism in southern Mexico: a unique case on Earth? *Geology*, **30** (12): 1095-1098.

2002.9 **Verma, S. P., Torres-Alvarado, I. S.,** and Sotelo-Rodríguez, Z. T. (2002) SINCLAS: Standard igneous norm and volcanic rock classification system. *Computers & Geosciences*, **28** (5): 711-715.

2002.10 **Verma, S. P., Santoyo, E.,** and Velasco-Tapia, F.\* (2002) Statistical evaluation of analytical methods for the determination of rare-earth elements in geological materials and implications for detection limits. *International Geology Review*, **44** (4): 287-335.

[\* was a doctoral student in our group]

## 2003

2003.1 **Armstrong-Altrin, J. S., Verma, S. P.,** J. Madhavaraju, Y. I. Lee, and S. Ramasamy (2003) Geochemistry of upper Miocene Kudankulam limestones, Southern India. *International Geology Review*, **45** (1): 16-26.

2003.2 González-Partida E., G. Levresse, and **E. Santoyo** (2003) Paleo-fluid and actual-fluid in the Los Azufres Geothermal Field, Central México. *Journal of Geochemical Exploration*, **78-79C**: 67-70.

2003.3 M. C. Núñez-Santiago\*, **E. Santoyo**, L.A. Bello-Pérez and S. Santoyo-Gutiérrez (2003) Rheological evaluation of non-Newtonian Mexican nixtamalised maize and dry processed masa flours. *Journal of Food Engineering* **60** (1): 55-66.

[\*The first author was a M. Sc. Student taking a postgraduate course delivered by E. Santoyo who contributed with the “know-how” of “data quality and handling”].

2003.4 **Santoyo, E. and Verma, S. P.** (2003) Determination of lanthanides in synthetic standards by RP-HPLC with the aid of a weighted linear regression model: estimation of method sensitivities and detection limits. *Journal of Chromatography A*, **997**: 171-182.

2003.5 **Santoyo E.,** A. García, G. Espinosa, S. Santoyo-Gutiérrez, and E. Gonzalez (2003) Convective heat transfer coefficients of non-Newtonian geothermal drilling fluids. *Journal of Geochemical Exploration*, **78-79C**: 249-255.

2003.6 **Smith, A. D.** (2003) Intraplate volcanism: concepts, problems, and proofs. *Astronomy and Geophysics*, **44**: 2.8-2.9.

2003.7 **Smith, A. D.** (2003) Critical evaluation of Re-Os and Pt-Os isotopic evidence on the origin of intraplate volcanism. *Journal of Geodynamics*, **36** (4): 469-484.

2003.8 **Smith, A. D.** (2003) A re-appraisal of stress field and convective roll models for the origin and distribution of Cretaceous to Recent intraplate volcanism in the Pacific basin. *International Geology Review*, **45** (4): 287-302.

2003.9 **Torres-Alvarado, I. S., and Verma, S. P.** (2003) Comment to “Neogene volcanism at the front of the central Mexican volcanic belt: basaltic andesites to dacites, with contemporaneous shoshonites and high-TiO<sub>2</sub> lava” by Blatter, D.L., Carmichael, I.S.E., Deino, A.L., Renne, P.R. *Geological Society of America Bulletin*, **115** (8): 1020-1021.



- 2003.10 **Torres-Alvarado, I. S., Verma, S. P.,** Palacios-Berruete, H., **Guevara-García, M.,** and González-Castillo, O.Y. (2003) DC\_BASE: a database system to manage Nernst distribution coefficients and its application for partial melting modeling. *Computers and Geosciences*, **29** ( ): 1191-1198.
- 2003.11 **Verma, S. P.** (2003) Geochemical and Sr-Nd isotopic evidence for a rift-related origin of magmas in Tizayuca volcanic field, central Mexican Volcanic Belt. *Journal of Geological Society of India*, **61** (3): 257-276.
- 2003.12 **Verma, S. P.,** and Carrasco-Núñez, G. (2003) Reappraisal of the geology and geochemistry of the Volcán Zamorano, central Mexico: implications for discriminating the Sierra Madre Occidental and Mexican Volcanic Belt provinces. *International Geology Review*, **45** (8): 724-752.
- 2003.13 **Verma, S. P.,** and **Santoyo, E.** (2003) An unusual systematic behaviour of detection limits for elements from  $^{55}\text{Cs}$  to  $^{73}\text{Ta}$ . *Analytical and Bioanalytical Chemistry*, **377** (1): 82-84.
- 2003.14 **Verma, S. P., Torres-Alvarado, I. S.,** and Velasco-Tapia, F.\* (2003) A revised CIPW norm. *Schweizerische Mineralogische Und Petrographische Mitteilungen*, **83** (2): 197-216.

[\* was a doctoral student in our group]

## 2004

- 2004.1 Agrawal, S., **Guevara, M.,** and **Verma, S. P.** (2004) Discriminant analysis applied to establish major element field boundaries for tectonic varieties of basic rocks. *International Geology Review* **46** (7): 575-594.
- 2004.2 **Armstrong-Altrin, J. S.,** Lee, Y. I., **Verma, S. P.,** and Ramasamy, S. (2004) Geochemistry of sandstones from the Late Miocene Kudankulam Formation, South India: Implications for provenance, weathering, and tectonic setting. *Journal of Sedimentary Research* **74** (2): 285-297.
- 2004.3 Madhavaraju, J., Kolosov, I., Buhlak, D., **Armstrong-Altrin, J. S.,** Ramasamy, S., and Mohan, S. P. (2004) Carbon and oxygen isotopic signatures in Albian-Danian limestones of Cauvery basin, southeastern India. *Gondwana Research* **7** (2): 527-537.
- 2004.4 **Pandarath, K., Verma, S. P.,** and Yadava, M. G. (2004) Dating of sediment layers and sediment accumulation studies along the western continental margin of India – a review. *International Geology Review* **46** (10): 939-956.
- 2004.5 Srivastava, R. K., Singh, R. K., and **Verma, S. P.** (2004) Neoproterozoic mafic volcanic rocks from the southern Bastar greenstone belt, Central India: petrological and tectonic significance. *Precambrian Research* **131** (3-4): 305-322.
- 2004.6 **Sun, Y.** (2004) Detailed study on simultaneous separation of rare earth elements by capillary electrophoresis. *Journal of Chromatography A* **1048**: 245-251.
- 2004.7 **Verma, S. P.** (2004) Solely extension-related origin of the eastern to west-central Mexican Volcanic Belt (Mexico) from partial melting inversion model. *Current Science* **86** (5): 713-719.
- 2004.8 **Verma, S. P.,** and Hasenaka, T. (2004) Sr, Nd, and Pb isotopic and trace element geochemical constraints for a veined-mantle source of magmas in the Michoacán-Guanajuato Volcanic Field, west-central Mexican Volcanic Belt. *Geochemical Journal*, **38** (1): 43-65.

## 2005

2005.1 Andaverde, J. \*, **Santoyo, E.**, and **Verma, S. P.** (2005) Uncertainty estimates of static formation temperatures in boreholes and evaluation of regression models. *Geophysical Journal International*, **160** (3): 1112-1122.

[\* is a doctoral student in our group]

2005.2 Armstrong-Altrin, J. S. and **Verma, S. P.** (2005) Critical evaluation of six tectonic setting discrimination diagrams using geochemical data of Neogene sediments from known tectonic settings. *Sedimentary Geology*, **177** (1-2): 115-129.

2005.3 Campos-Enríquez, J. O., Domínguez-Méndez, F., Lozada-Zumaeta, M., Morales-Rodríguez, H. F., **Andaverde-Arredondo, J.\*** (2005) Application of the Gauss theorem to the study of silicic calderas: the calders of La Primavera, Los Azufres, and Los Humeros (Mexico). *Journal of Volcanology and Geothermal Research*, **147**: 39-67.

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