

Special Volume on Geochemistry in Mexico

PRESENTATION

GUEST EDITORS:

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The idea of editing a special volume on geochemistry originated during the activities of the *National Institute of Geochemistry (Instituto Nacional de Geoquímica, A. C. - INAGEQ)*, founded in June, 1990, by Surendra P. Verma J., David J. Terrell, Juan Manuel Barbarín C., Georgina Izquierdo M., Ma. Aurora Armienta H. y Cecilia O. Rodríguez de B., before the "*1st. National Congress of Geochemistry*", Linares, N. L., 3 — 5 September, 1991. This first Congress brought together about 100 professionals, researchers and students, who presented and discussed 45 papers in 9 technical sessions. Membership directory and statutes of the INAGEQ, as well as extended abstracts, were included in the Vol. 6, LIV + 209 p., of the "*Actas de la Facultad de Ciencias de la Tierra de la Universidad Autónoma de Nuevo León, Linares*" (S. P. VERMA, J. A. RAMÍREZ F., C. O. RODRIGUEZ DE B., J. M. BARBARÍN C., G. IZQUIERDO M., M. A. ARMIENTA H. and D. J. TERRELL, editors).

We present here a summary of the papers included in this special volume.

1. Velasco and Verma describe a statistical package for handling rare earth element data in international geochemical reference samples. This package provides information on the mean, standard deviation and number of samples used for each element.

2. Rodríguez de Barbarín and Barbarín Castillo present a physical, chemical and bacteriological study of surface waters of Linares-Cerro Prieto basin, Nuevo León, Mexico and analyze the influence of regional geology, seasonal variations and human activity.

3. Verma, Salazar-V., Negendank, Milán, Navarro-L. and Besch report major element geochemical data in Los Tuxtlas volcanic field, Veracruz and compare them with similar volcanic rocks from the regions of Palma Sola, Veracruz (Eastern Mexican Volcanic Belt) and Sanganguey, Nayarit (Northwestern Mexican Volcanic Belt).

4. González Partida presents whole rock geochemical data for a Cretaceous volcano-sedimentary sequence in two regions: Tierra Caliente, Guerrero and Cuale-El Rubi, Jalisco, where alkaline and calc-alkaline rocks were found respectively.

5. Milán, Yáñez, Navarro-L., Verma and Carrasco-Núñez describe the geology, volcanic evolution and major element geochemistry of Huichapan caldera, Hidalgo. The main objective is to present the data for comparing this area with other calderas of the Mexican Volcanic Belt.

6. Cardona, Carrillo and Armienta analyze important aspects of trace elements in underground waters from San Luis Potosí and propose criteria for distinguishing between pollution and background.

7. Santoyo and Verma present a statistical evaluation of SiO₂ and Na/K chemical geothermometers by incorporating statistical and analytical errors.

8. González P., Barragán and Nieva-G. present carbon isotope data in geothermal fluids of Los Humeros, Puebla and use them to evaluate the origin of the carbonic species.

9. Verma, Guevara, Besch and Schulz-Dobrich evaluate X-ray fluorescence spectrometry for the determination of major and trace elements in geological samples. They report relative errors for each element based on a study of international geochemical reference samples.

10. Izquierdo applies X-ray diffraction for characterizing clay minerals resulting from hydrothermal alteration in a well from Los Humeros geothermal field, Puebla, and thus documents the importance of this technique for the study of geothermal fields.

11. Andaverde, Verma and Schildknecht use fractional crystallization models proposed for two geothermal fields (Los Azufres, Michoacan and Los Humeros, Puebla) of the Mexican Volcanic Belt, in order to estimate the heat contribution from fractional crystallization of a basaltic magma.

12. Santoyo Gutiérrez and Morales Rosas present a review of the polymers developed and used with drilling fluids in geothermal wells. They comment on the selection and evaluation of these materials.

13. De la Fuente-G. and Verma present a catalog of volcanic edifices in the central and western parts of the Mexican Volcanic Belt, where 3,225 volcanic structures were identified in an area of 141,000 km².

Finally, a brief review is included on a book on geochemistry of magmatic processes.

We acknowledge the expert help given by Dr. Cinna Lomnitz, Lic. François Graffé, Ms. Mónica García and the reviewers, as well as the facilities and support of our institutions, the *Instituto de Investigaciones Eléctricas* and *Facultad de Ciencias de la Tierra de la Universidad Autónoma de Nuevo León*. We are very grateful to Terul,

Chayito and Juan Manuel for their support during the development of this work.

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