

Activities of the Spanish Clay Society (SEA) in 2010

The SEA co-organized the 2010 Trilateral Meeting on Clays (2010TMC) with the Clay Science Society of Japan (CSSJ) and the Clay Minerals Society (CMS), which celebrated it as 47th Annual Meeting. The Organizing Committee was Chaired by Eduardo Ruiz-Hitzky (SEA) and Co-chaired by Yoshiaki Fukushima (CSSJ) and Ray Ferrell (CMS), acting Pilar Aranda (SEA) as General Secretary and Patricia Aparicio (SEA) as General Treasurer. From 6th to 11th June 2010 the 2010TMC held in Madrid and Seville the following Scientific Activities: a Workshop on Materials and Clays, a Symposium on Sepiolite, a General Meeting and a Field Trip to the Riotinto mines in Southwest of Spain.

The starting event of the 2010TMC was the one-day Workshop on Clays & Materials held at the Materials Science Institute of Madrid of the National Research Council of Spain (ICMM-CSIC, <http://www.icmm.csic.es/>) on June 6th. The chairs, Pilar Aranda (SEA), Makoto Ogawa (CSSJ), and Lawrence F. Drummy (CMS), were assisted by Margarita Darder, M. Angeles Martín-Luengo, Carolina Belver, Francisco M. Fernandes and Bernd Wicklein, all members of the SEA. Ten speakers reviewed conventional and innovative aspects of industrial and medical applications of clay and related materials, introducing the following conferences:

- o K. A. Carrado (Argonne National Laboratory, USA). “Materials research at the Center for Nanoscale Materials – a U.S. Dept. of Energy Nanoscale Science Research Center”
- o H. Van Damme (ESPCI, France). “Earth: an eco-friendly clay concrete”
- o P. Aranda (ICMM-CSIC, Spain). “Inorganic heterostructured materials based on clay minerals”
- o M. Ogawa (Waseda University, Japan). “Immobilization of organic dyes on clays towards controlled photoinduced events”
- o K. Haraguchi (Kawamura Institute of Chemical Research, Japan). “Nanocomposite gels: a unique class of polymer/clay networks and their characteristics”
- o T. Ebina (AIST, Japan). “Development of clay-based films: preparation and applications”
- o S. Sinha Ray (CSIR, South Africa). “Advances in degradable polymer/clay nanocomposites”
- o C. Detellier (Ottawa University, Canada). “Kaolinite-based nanocomposites”
- o L.F. Drummy (US Air Force, USA). “Structure-property relationships in clay-polymer nanolaminate materials”
- o C. Forano (Blaise Pascal University, France). “Advanced materials based on LDH-biomolecules assemblies”

The proceedings will be published online by the CMS as a monograph in their Workshop Lectures Series. A fourth of the 102 participants, coming from 20 countries around the world, were from Spain.

The Symposium on Sepiolite included a field trip to Mg-clay deposits close to Madrid on June 7th and a one-half day technical session held in historical *Facultad de Derecho* of the University of Seville, counting with 89 participants. The Symposium activities were organized by Santiago Leguey and Jaime Cuevas from the Autonomous University of Madrid (UAM) and Emilia García-Romero, José Fernández-Barrenechea and Javier Luque from the Complutense University of Madrid (UCM), counting with the help from Javier Berrio and Antonio Alvarez (TOLSA SA) as well as Daniel Tejela (Süd-Chemie Spain). The visit to sepiolite quarries at Vicalvaro (Madrid) and Cabañas de la Sagra (Toledo) mines operated by TOLSA allowed to the field trip participants to had ample sampling opportunities. The activities in Seville include 6 talks describing for the origin of sepiolite to technical and advanced applications of this particular clay mineral. A book was edited with the information of the field-trip to the sepiolite deposits and the papers of the lectures.

- o Emilio Galán (University of Seville). “Introductory Lecture”
- o B.F. Jones (US Geological Survey). “The natural geochemistry of sepiolite: a review”
- o M. Suárez (University of Salamanca). “Structure and composition of sepiolite”
- o J. Cuevas (UAM). “Evidences for biogenic origin of sepiolite”
- o A. Álvarez (TOLSA SA). “Sepiolite: an overview from traditional markets to new applications”
- o E. Ruiz-Hitzky (ICMM-CSIC). “Sepiolite: singular clay for advanced applications”

The General Meeting of the 2010TMC took place at the Hotel Melia-Sevilla from June 8th to 10th. M. Carmen Hermosín (SEA) was the Chair and Hirohisa Yamada (CSSJ) and Paul Schroeder (CMS) acted as Co-chairs, counting with the help of a Local Organizing Committee integrated by Juan Cornejo, Celia Maqueda, Esmeralda Morillo, Lucia Cox, Rafael Celis, Tomas Undabeytia, Felipe Bruna, Isabel Gonzalez, and Patricia Aparicio. The 2 days and a half activities count with 8 Plenary Lectures and 6 Keynotes that included among the firsts those introduced by the Awardees from the CMS and CSSJ, a total of 54 oral communications and 145 posters within the 7 Topics: 1. Structural features and Crystal Chemistry, 2. Mineralogy and Geology, 3. Soil and Sediments, 4. Environment & Energy, 5. Biological Aspects & Health, 6. Industrial and others applications, and 7. Clays in Education Programs. Abstracts of all oral and poster presentations in the General Meeting are available online at http://www.sea-arcillas.es/2010TMC/Book_of_abstracts-2.pdf.

Plenary Lectures:

- o J.M. Serratosa (ICMM-CSIC). “Clay science: an area of interdisciplinary research” (**CMS Bailey Award**)
- o R.T. Cygan (Sandia National Laboratories). “Molecular simulation and the nature of the clay-water interface” (**CMS Brindley Award**)
- o E. Ruiz-Hitzky (ICMM-CSIC). “Clay-based nanostructured eco-materials: from energy storage to biomedical applications”
- o J. Cornejo (IRNASE-CSIC). “Clays for a healthy soil-water environment”

- o A. Inoue (Chiba University). “Application of chlorite geothermometer to low temperature rock alteration”
- o T. Kogure (The University of Tokyo). “Clays in TEM” (**CMS Jackson Award**)
- o S. Takagi (Tokyo Metropolitan University). “Efficient photochemical energy transfer reactions in clay-porphyrin complexes in TEM” (**CSSJ Award**)
- o E. Narita (Iwate University). “Kinetic study on intercalation of organic anions in layered double hydroxide using quartz crystal microbalance” (**CSSJ Award**)

Keynotes:

- o Topics 1 & 7. G. Rytwo (Tel Hai Academic College). “Infrared spectroscopy: principles and applications in the study of clay-organic interactions”
- o Topic 2. F. Nieto (University of Granada). “Low grade metamorphism in polydeformed rocks of Avalonia (Arisaig Group, Nova Scotia, Canada)”
- o Topic 3. T. Hatta (Japan International Research Center for Agricultural Sciences). “Study on crystal growth and control to improve soil fertility”
- o Topic 4. T. Sato (Hokkaido University). “Earth engineering technology learnt from low temperature present-day-serpentinization”
- o Topic 5. R.A. Schoonheydt (K.U. Leuven). “Adsorption of proteins on saponite”
- o Topic 6. V. Rives (University of Salamanca). “Layered double hydroxides and their use as precursors of ceramic pigments”

Among the communications applying for the Awards to the best presentations by Young Researchers, Francisco M. Fernandes (ICMM-CSIC), SEA student, got the best oral presentation award for the communication co-authored with E. Ruiz-Hitzky entitled: “*On the synergy between sepiolite and carbon nanotubes in bionanocomposites*”. Sara Moron (University of Minnesota) received the best Earth Science poster award for her communication entitled: “*Middle Miocene in Panama, wet or dry?*”. It was co-authored with C. Montes, A. Cardona, C. Jamarillo, and D. Fox. Yohei Ishida was awarded the best poster presentation award in Clay Technology for the paper (co-authored with S. Takagi, D. Masui, T. Shimada, H. Tachibana, and H. Inoue), “*Efficient excited energy transfer reaction between porphyrins on clay surface: the effects of adsorption conditions*”.

The 2010TMC ended with a trip to the Rio Tinto pyrite mines in the province of Huelva, about 80 km northwest of Seville. The mining operations (since Prehistoric time), exploiting gold, copper, silver, zinc, lead and others, have created a world of reddish hues and a wide range of other colors. Waters draining the region have extremely acidic pHs. The history of the region was told through exhibits at a government supported tourist facility. The trip was organized by Isabel González and Antonio Romero (University of Seville).

SEA provided financial assistance for the participation in the 2010TMC activities to the following 4 students: Ana C.S. Alcântara (ICMM-CSIC), Francisco M. Fernandes (ICMM-CSIC), Ana I. García San Cristobal (CCMA-CSIC) and Bernd Wicklein (ICMM-CSIC).

In the General Assembly celebrated in Madrid (29th November 2010)) the Council of the SEA was partially changed, being the current composition:

President: Dr. Mercedes Suárez Barrios (till 2014)
Past- President: Prof. Eduardo Ruiz Hitzky (till 2014)
Vice-President: Dr. Francisco Javier Huertas Puerta (till 2012)
Secretary: Dr. Blanca Bauluz Lázaro (till 2014)
Treasury: Dr. Jaime Cuevas Rodríguez (till 2014)

Elected members:

Dr. Patricia Aparicio Fernández (till 2012)
Dr. Carolina Belver Coldeira (till 2014)
Dr. Francisco Ignacio Franco Duro (till 2014)
Prof. M. Carmen Herмосín Gaviño (till 2014)
Dr. Francisco Javier Luque del Villar (till 2014):
Dr. Juan Carlos Fernández Calinai (till 2012)
Dr. Claro Ignacio Sainz Díaz (till 2012)
Dr. Miguel Angel Vicente Rodríguez (till 2012)

Members of the SEA during their term at the AIPEA Council:

Prof. Saverio Fiore (till 2013)
Prof. Giora Rytwo (till 2013)

The General Assembly also proposed that Dr. Pilar Aranda and Dr. Javier Huertas continued as members of the Editorial Board of Clay Minerals till 2014.

The SEA General Assembly celebrated in Madrid was also informed that the “Martin-Vivaldi Award 2011”, sponsored by the SEA, has been already launched. The SEA will contribute with 1.000 Euros to facilitate the participation in the Euroclay2011 of a young researcher member of a Clay Group integrated in the ECGA. More information is available at <http://www.euroclay2011.org/?page=awards>.

Pilar Aranda
Secretary of the SEA



Photo 3. A moment during the opening Ceremony of the 2010TMC Sepiolite Symposium conferences held in Seville. From left to right: Prof. Blair Jones (Invited Speaker to the Symposium), Prof. Eduardo Ruiz-Hitzky (SEA President and Chair of the 2010TMC), Prof. Antonio Merchán Álvarez (Dean of the Faculty of Law at the University of Seville), Prof. Emilio Galán (Invited Speaker of the Symposium), Dr. Jaime Cuevas (Co-Chair of the 2010TMC Sepiolite Symposium).



Photo 4. A moment during the dinner of the 2010TMC Workshop on Materials & Clays held in Madrid. From left to right: Prof. Makoto Ogawa (CSSJ), Dr. Pilar Aranda (SEA) and Dr. Lawrence F. Drummy (CMS) Chairs of the 2010TMC Workshop, and Dr. Suprakas Sinha Ray (Invited Speaker).



Photo 5. Professors Giora Rytwo, Santiago Leguey and Fernando Nieto in a moment during the Field Trip of the 2010TMC to Riotinto Mines at the Southwest region of Spain.



Photo 6. Mr. Francisco M. Fernandes, SEA Student Member, with his Diploma to the best Oral Presentation introduced by a student at the 2010TMC General Meeting.