

Georgios D. Chryssikos

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Education

1987 Ph.D. in Physical Inorganic Chemistry, Brown University, Providence, RI, USA
1983 Diploma of Chemistry, University of Athens

Research appointments

2021- Coordinator, Applied Spectroscopy Laboratory, TPCI/NHRF
2004-2017 Coordinator, Applied Spectroscopy Laboratory, TPCI/NHRF
2002- Director of Research at the Theoretical and Physical Chemistry Institute, NHRF
1998-2002 Senior Researcher at TPCI/NHRF
1992-1998 Associate Researcher at TPCI/NHRF
1988-1991 Assistant Researcher at the TPCI/NHRF.
1985-1986 Travelling Scholar from Brown University to NHRF, Athens.
1984-1987 Research and Teaching Assistant, Chemistry Department, Brown University, USA

Main research interests

- Crystallochemistry of minerals. Structure / property relationships with emphasis in the study of clays by Near-Infrared spectroscopy. Clay-based hybrid materials.
- Structural / spectroscopic characterization of polymers – biopolymers. Secondary structures and interactions at interfaces. Colloids.
- Application of spectroscopic techniques to industrial production monitoring and quality control - Chemometrics.

External funding

Coordinator of about 25 research projects funded by the private sector, or by National and European sources. R&D services to the industry.

Conferences and invited talks

GDC has participated in more than 75 international conferences, 19 invited.

Teaching activities

Graduate seminar courses in Applied Vibrational Spectroscopy. Univ. of Athens (Dept. of Biology) and Univ. of Ioannina (Dept. of Materials Engineering)

Professional affiliations and activities

Member of the Clay Minerals Society (USA) and the American Mineralogical Society.

Associate Editor of *Clays & Clay Minerals* (2014 -)

Publications

115 publications in international journals, 2 book chapters, >30 papers in refereed conference proceedings, 2 international patents, co-editor of one book. More than 6700 non-self-citations, h-index=44 (ISI).

Selected recent publications

"Kinetics of hydrogen isotope exchange in kaolinite and the prediction of δD signature retention over geological time", A. Derkowski, A. Szeleter, E. Siranidi, G.D. Chryssikos. [Geochim. Cosmochim. Acta, 2025, 388, 154-166](#). DOI: 10.1016/j.gca.2024.09.033

"Structure of tubular halloysite-(10Å) and its transition to -(7Å) by infrared spectroscopy and X-Ray diffraction", E. Siranidi, S. Hillier, G.D. Chryssikos, [Clays Clay Min., 2024, 72, e33, 1-14](#)

"Methods for determination of the layer charge of smectites: A critical assessment of existing approaches", G.E. Christidis, G.D. Chryssikos, A. Derkowski, R. Dohrnsn, D.D. Eberl, E. Joussein, S. Kaufhold, [Clays Clay Miner. 2023, 71, 25-53](#).

"On the unusual temperature dependence of kaolinite intercalation capacity for N-methylformamide", F. Andreou, E. Siranidi, A. Derkowski, G. D. Chryssikos, [Clays Clay Miner., 2023, 70, 796-807](#)

"Intercalation of N-methylformamide in kaolinite: In situ monitoring by near-infrared spectroscopy and X-ray diffraction", F. Andreou, B. Barylska, Z. Ciesielsca, M. Szczerba, A. Derkowski, V. Gionis, E. Siranidi, G. D. Chryssikos, [Appl. Clay Sci., 2021, 212, 106209](#).

"Smectite in bentonite: near infrared systematics and estimation of layer charge", C. Tsiantos, V. Gionis, G. D. Chryssikos, [Appl. Clay Sci., 2018, 160, 81-87](#).

"The nature of laponite: pure hectorite or a mixture of different trioctahedral phases?"
G. E. Christidis, C. Aldana, G. D. Chryssikos, V. Gionis, H. Kalo, M. Stöter, J. Breu, J.-L. Robert, [*Minerals*, **2018**, *8*, 314.](#)

"Measuring the layer charge of dioctahedral smectites by O-D vibrational spectroscopy",
A. Kuligiewicz, A. Derkowski, K. Emmerich, G.E. Christidis, C. Tsiantos, V. Gionis, G. D. Chryssikos, [*Clays and Clay Miner.* **2015**, *63*, 443-456.](#)

"Revisiting the infrared spectrum of the water-smectite interface". A. Kuligiewicz, A. Derkowski, M. Szczerba, V. Gionis and G. D. Chryssikos, [*Clays & Clay Miner.*, **2015**, *63*, 15-29](#)

"Vibrational investigation of indigo–palygorskite association(s) in synthetic Maya blue",
C. Tsiantos, M. Tsampodimou, G. H. Kacandes, M. Sanchez del Rio, V. Gionis, G. D. Chryssikos, [*J. Mater. Sci.*, **2012**, *47*, 3415-3428.](#)