Description

Applied Clay Science aims to be an international journal attracting high quality scientific papers on clays and clay minerals, including research papers, reviews, and technical notes. The journal covers typical subjects of Fundamental and Applied Clay Science such as:

- Synthesis and purification
- Structural, crystallographic and mineralogical properties of clays and clay minerals
- Thermal properties of clays and clay minerals
- Physico-chemical properties including i) surface and interface properties; ii) thermodynamic properties; iii) mechanical properties
- Interaction with water, with polar and apolar molecules
- Colloidal properties and rheology
- Adsorption, Intercalation, Ionic exchange
- Genesis and deposits of clay minerals
- Geology and geochemistry of clays
- Modification of clays and clay minerals properties by thermal and physical treatments
- Modification by chemical treatments with organic and inorganic molecules (organoclays, pillared clays)
- Modification by biological microorganisms
- Structural and textural modifications of clay minerals (metakaolin etc)
- Synthesis of other materials (such as zeolites, geopolymers) starting from clay minerals. However, the main part of the manuscript should be focused on clay minerals)
- Novel materials based on clay minerals such as clay polymer (bio)nanocomposites
- Clays and clay minerals in formulations of pesticides and drugs and in animal food production
- Environmental applications such as Radioactive Waste Disposal, and Water Engineering, Depollution of heavy metals, Filtration
- Fillers and coating (paint, rubber, plastics)
- Drilling fluids and drilling muds in petroleum industry
- Foundry moulding
- Applications in soil chemistry and in agriculture
- Applications of clay mineral in hydrocarbon and geothermal prospection
- Geotechnical applications of clays and clay minerals
- Applications in ceramics, construction, iron ore and steel industry, paper, catalysis, cosmetics
- Related lamellar materials such as Layered Double Hydroxides (LDH), layered oxides, layered silicates, Cement Silicate Hydrates (CSH)
Benefits to authors

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our Support Center.

AUDIENCE

Clay scientists, Materials scientists, Mineralogists, Crystallographers, Chemists, Physicists, Geologists, Soil scientists, Geotechnical and petroleum Engineers, Environmental scientists, and all researchers, engineers, industrials and students using clays and clay minerals

IMPACT FACTOR

2018: 3.890 © Clarivate Analytics Journal Citation Reports 2019

ABSTRACTING AND INDEXING

Engineering Index
Pascal Francis
Mineralogical Abstracts
Engineering Village - GEOBASE
Science Citation Index
GeoRef
Chemical Abstracts
Scopus
Current Abstracts (EBSCO)
Academic Search (EBSCO)
TOC Premier
Compendex
PubMed/Medline
OCLC Contents Alert
Personal Alert
ProQuest
Engineering Index Monthly
Arts & Humanities Search
Science Citation Index Expanded
Web of Science
Referativnyi Zhurnal VINTI-RAN (Russian Academy of Sciences)
INSPEC

EDITORIAL BOARD

Editors-in-Chief
Yuan Peng, Guangzhou Institute of Geochemistry, Guangzhou, China
Maria Victoria Villar, Research Centre for Energy Environment and Technology, Madrid, Spain

Associate Editors
Pilar Aranda, Spanish Scientific Research Council, Madrid, Spain
Juraj Bujdak, Comenius University in Bratislava, Bratislava, Slovakia
Giuseppe Lazzara, University of Palermo, Palermo, Italy
Vanessa Prévot, Institute of Chemistry Clermont-Ferrand Inorganic Materials Team, Aubière cedex, France

Editorial Board
Thomas Baumgartl, University of Queensland, Brisbane, Queensland, Australia
Gary Beall, Texas State University, San Marcos, Texas, United States
Maria Isabel Carretero, University of Seville, Sevilla, Spain
Zhou Chunhui, Zhejiang University of Technology, Hangzhou, China  
Francis Clegg, Sheffield Hallam University, Sheffield, United Kingdom  
Umberto Costantino, University of Perugia, Perugia, Italy  
Imre Dekany, University of Szeged, Szeged, Hungary  
Michele Dondi, Institute of Science and Technology of Ceramic Materials National Research Council, Faenza, Italy  
Hailiang Dong, Miami University, Oxford, Ohio, United States  
Dipak Kumar Dutta, North East Institute of Science and Technology CSIR, Jorhat, India  
Maurizio Galimberti, Polytechnic University of Milan, Milano, Italy  
Will Gates, SmecTech Research Consulting, Bentleigh East, Victoria, Australia  
Yuan Guodong, Zhaqing University, Zhaqing, China  
Necip Guven, TEXAS TECH UNIVERSITY, Lubbock, Texas, United States  
He Hongping, Guangzhou Institute of Geochemistry, Guangzhou, China  
Syed Arshad Hussain, Tripura University, Department of Physics, Tripura, India  
Maguy Jaber, Sorbonne University, Paris, France  
John Keeling, Primary Industries and Regions of South Australia, Adelaide, South Australia, Australia  
John Kinuthia, University of South Wales, Pontypridd, United Kingdom  
Theo Kloprogge, University of Queensland School of Earth Sciences, St Lucia, Australia  
Peter Komadel, Slovak Academy of Sciences, Bratislava, Slovakia  
Sridhar Komarneni, Pennsylvania State University, University Park, Pennsylvania, United States  
Jean François Lambert, Sorbonne University, Paris, France  
Éva Makó, University of Pannonia, Veszprem, Hungary  
Daniele Malferrari, University of Modena and Reggio Emilia, Modena, Italy  
Laurent J Michot, Sorbonne University, Paris, France  
Makoto Ogawa, Vidyasirimedhi Institute of Science and Technology, Rayong, Thailand  
Robert Schoonheydt, KU Leuven Department of Chemistry, Heverlee, Belgium  
Ezzeddine Srasra, National Centre of Research in Materials Sciences (CNRSIM), Tunis, Tunisia  
Antoine Thill, French Alternative Energies and Atomic Energy Commission Saclay Center, Gif sur Yvette, France  
Didier Tichit, Charles Gerhardt of Montpellier Institute Advanced Materials for Catalysis and Health, Montpellier, France  
Etelka Tombácz, University of Szeged, Szeged, Hungary  
Christophe Tournassat, Bureau for Geological and Mining Research, Orleans, France  
Angelo Vaccari, University Hospital of Bologna Sant'Orsola-Malpighi Polyclinic, Bologna, Italy  
Cesar Vizerras, University of Granada, Granada, Spain  
Cristina Volzone, Minerals and Ceramics Technology Centre, Buenos Aires, Argentina  
Frank Wagner, University of Trier, Trier, Germany  
Fernando Wypych, Federal University of Paraná, Curitiba, Brazil  
Lu Xiancai, Nanjing University, Nanjing, China  

Emeritus Editors  
Faiza Bergaya  
Jock Churchman  
Colin Harvey  
Jeff Hughes  
Gerhard Lagaly  

Founding Editors  
Franz Eckhardt †  
Jack Gillott †  
Radko Kühnel †
GUIDE FOR AUTHORS

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.

To find out more, please visit the Preparation section below.

Types of Paper
1. Research Papers
The submitted text of Research Papers should cover no more than 20 pages (without Tables, Legends, and References, style: font size 12, double line spacing). The maximum number of illustrations should not exceed 10. Results may be shown in tables or figures but not in both of them.

2. Review Articles
Before submitting Review Articles, the authors should consult the Editors-in-Chief.

3. Communications
Communications are concise reports or short articles with novelty whose immediate availability to the clay scientific community is deemed important. They should cover no more than 1 to 3 printed pages (including Tables, Legends, and References, style: font size 12, double line spacing). The maximum number of illustrations should not exceed 3. This submission should be reviewed by at least two editors and a final decision (acceptance or not) will be taken not more than 1 month after the date of submission.

4. Technical Notes
Notes refer to resources, technologies, and applications of clays and clay minerals of mainly local interest. They must satisfy the same high scientific standard as the Research Papers and will be peer-reviewed like the other categories of manuscripts. The submitted text should not exceed 10 pages (without Tables, Legends, and References, style: font size 12, double line spacing). No more than 5 illustrations should be presented. This note will appear only by DOI and will not be published in hard copy. However, a summary can be accepted in hard copy.

For comments on published papers, please select Discussion. For replies to such comments, select Reply.

Submission checklist
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

All necessary files have been uploaded:
Manuscript:
• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
• Manuscript has been 'spell checked' and 'grammar checked'
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• A competing interests statement is provided, even if the authors have no competing interests to declare
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN

Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Declaration of interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/ registrations, and grants or other funding. Authors should complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. More information.

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

Author contributions
For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example

Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.
Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

Article transfer service
This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies
Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of existing agreements are available online.

Open access
This journal offers authors a choice in publishing their research:

Subscription
• Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
• No open access publication fee payable by authors.
• The Author is entitled to post the accepted manuscript in their institution’s repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

Gold open access
• Articles are freely available to both subscribers and the wider public with permitted reuse.
• A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.
Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For gold open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

**Creative Commons Attribution (CC BY)**
Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

**Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)**
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The gold open access publication fee for this journal is **USD 2500**, excluding taxes. Learn more about Elsevier's pricing policy: https://www.elsevier.com/openaccesspricing.

**Green open access**
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 24 months.

**Elsevier Researcher Academy**
Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

**Language (usage and editing services)**
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

**Submission**
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor’s decision and requests for revision, is sent by e-mail.

**Submit your article**
Please submit your article via http://ees.elsevier.com/clay

**Referees**
Please submit, with the manuscript, the names, addresses and e-mail addresses of 4 potential referees (not all from the same country of the authors and never from the same institution). Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

**PREPARATION**
NEW SUBMISSIONS
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

Formatting requirements
All manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.
If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes. The manuscript should be clearly organized and divided in clearly defined sections Repetitions must be deleted Terms like “it is observed (noted, seen), Fig. (Table) shows, it is clear that” should be deleted Personal expression like “we, our” should be avoided

Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

Peer review
This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

REVISED SUBMISSIONS
Use of word processing software
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

LaTeX
You are recommended to use the Elsevier article class elsarticle.cls to prepare your manuscript and BibTeX to generate your bibliography.
Our LaTeX site has detailed submission instructions, templates and other information.

Article structure
Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Essential title page information
- Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- Author names and affiliations. Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-
case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

### Highlights

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: [example Highlights](#).

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

### Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Graphical abstract**

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

### Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using British/American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

The keywords should be taken from the most recent edition of the AGI GeoRef Thesaurus.

### Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

### Data Availability

Authors are encouraged to include a 'Data Availability' section in their manuscript which is visible in ALL reading formats and may refer to data hosted in ANY repository. It should be placed before the references to provide readers with information about where they can obtain the research data required to reproduce the work reported in the manuscript, and typically consists of a simple sentence giving the URL(s) of and citation(s) to the dataset(s). Full information can be found [here](#).

### Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

---

AUTHOR INFORMATION PACK 3 Jan 2020 www.elsevier.com/locate/clay
Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

- all dimensions in IUPAC units, e.g. viscosity in Pa;
- avoid the use of meq, the CEC should be given in cmol(+)/kg or in eq/g
- If other units are mentioned, please give their equivalent in SI units the first time they are used.
- Units are generally reported with a space between the number and the units except for X°C and X %, then remove the space before°C and before %

Correct terminology

Part A: Fundamentals
Part B: Techniques and Applications

- Most used abbreviations in the Handbook: kaolinite (Kaol), kaolin (K), metakaolin (MK) montmorillonite (Mt), bentonite (Bent) smectite (Sm), beidellite (Bd), hectorite (Ht) Laponite (Lap) sepiolite (Sep) illite (I) illite-smectite (I-Sm) palygorskite (Pal) (avoid attapulgite) - Abbreviations should not contain final 's' even for plural

- When naming the mineral, all the names of natural clay minerals are with low case but Laponite is with capitalized initial because it is the name of a synthetic clay mineral
- Phyllosilicates cannot be used instead of clay minerals: all the phyllosilicates are not clay minerals. Clay minerals are a group of phyllosilicates.
- Distinguish clearly between clay and clay mineral
- Clay layer (surface, charge etc.) should be clay mineral layer (surface, charge etc.)
- Clay should be specified such as bentonite, kaolin;
- Clay mineral should be specified such as montmorillonite, kaolinite
- Bentonite clay, montmorillonite clay, smectite clay should be bentonite, montmorillonite, smectite
- Natural clay should be raw clay
- Polymer clay (mineral) (nano)composite should be clay (mineral) polymer (nano)composite, abbreviated CPN
- Tetrahedral (octahedral) layer should be tetrahedral (octahedral) sheet. One layer contains one or two tetrahedral sheet and one octahedral sheet.
- Anionic clay = layered double hydroxide (LDH)
- Nanosized zero valent iron and similar expressions should be iron nanoparticles
- Oxides also containing hydroxyl groups (oxyhydroxides) should be (hydr)oxides
- Use adsorption, adsorbed, adsorbent instead of sorption, sorbed, sorbent
- Use reflection instead of peak (or diffraction peak) when describing XRD diagrams
- d001 reflection is incorrect: use 001 reflection (basal reflection) or d001-value!
- d-spacing must be d-value
- Use dispersion instead of suspension (in most cases)
- Interlayer spacing should be interlayer space
- Gallery should be avoided, gallery (height) or spacing should be interlayer space
- Ionic (cationic, anionic) exchange should be ion (cation, anion) exchange
- Weight, molecular weight should be mass, molar mass
- Weight loss should be Mass loss
- Mole ratio should be molar ratio
- Percentage must indicate what type - volume, mass, etc.
- Surface area should be specific surface area
- Use correct nomenclature for surfactants, e.g., dimethyl dialkylammonium ions or trimethyl alkylammonium ions must be dialkyl dimethylammonium ions, alkyl trimethylammonium ions etc.

**Manuscript check list for submissions for ACS**
(The journal's Guide for authors see https://www.elsevier.com/locate/clay)

1. **Citation format** should be correct: by name-year and alphabetically ordered in the References list.

2. **Introduction** can be reported in both present and past tense, however when reference is made to existing literature only past tense can be used, e.g. Clark et al (1999) reported...

3. **Abstract results, Experiments** and **results** have to be reported in past tense (neither present nor perfect tense)

4. **Experimental section**:
   - Experimental data should not be given with too many digits. Please consider the limits of error. It is important that all relevant details are given including all materials used (plus where obtained), all experimental procedures and all significant details regarding analytical techniques used. It is also important to include the minimum information about clay minerals used in the paper such as their chemical composition in mass% of the various oxides or the structural formula and the cation exchange capacity
   Relevant information with regards to replicate samples and replicate analyses plus the relevant corresponding statistical information (errors, error bars in figures, repeatability, reproducibility, etc.)

4a. **X-ray diffraction.** - Details should include name/model of instrument, radiation source (Cu, Mo, etc) and wavelength, whether monochromator is used, slit width (detector and/or Soller), step scan size, counting time (atmosphere and temperature if applicable).
   - And for clay minerals it is very important that the sample preparation is described in detail.

4b. **Thermal analytical techniques.** - For methods like TGA, DTA and DSC details should include the name/model of the instrument, heating (cooling, constant temperature time) rate in °C/min, atmosphere (air, nitrogen, vacuum, etc.).
   - Make sure that mass loss in TGA is reported in percentages.
   - Make sure that there is no confusion between DTA and DSC (both measure exo/endothermic reactions but DTA must be reported in °T, whereas DSC is reported either as heat flow (mW) or energy rate per time unit).
   - In the case of evolved gas analysis details of the instruments used and their settings should be reported similar to when these techniques are used as stand-alone techniques (GC-MS, Mid-IR spectroscopy, etc.)

4c. **Spectroscopic methods.** - Infrared (IR) Spectroscopy or **Mid-Infrared** should be properly named when **Far-Infrared and Near-Infrared** are involved throughout the manuscript.
   - Make sure that the term frequency is only used when reporting in Hz, while cm-1 refers to wavenumber or spectral regions and **not** frequency!
   - Peaks and vibrations should be bands (vibrations refer to the motions between the atoms in the structure).
   - For band fitting program used, setting used (and in the main text rationale for the number of bands) must be given.
   - For all techniques the instrument name/model should be included plus type of technique (FT-IR, DRIFT, ATR, microscopy, emission), the spectral range (in cm-1), resolution (in cm-1), number of scans, detector type, (if possible mirror velocity) and sample preparation (KBr tablet with sample concentration, for other techniques like DRIFT, ATR, single crystal microscopy, etc.).
   - When appropriate the atmosphere in which measurements were made.
- For **Raman spectroscopy** the instrument name/model must be included plus the type of technique (FT-Raman, Raman microscopy), type of laser and its wavelength, spectral range (in cm⁻¹), resolution (in cm⁻¹), number of scans, type of microscope and m

**Math formulae**
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

**Footnotes**
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Artwork**
**Electronic artwork**

**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files. A detailed guide on electronic artwork is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

**Formats**
Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
- EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
- TIFF (or JPEG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

**Color artwork**
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Figure captions**
Ensure that each illustration has a caption. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.
Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References
References should be in English language.
Only historical papers or theses are accepted in foreign language

Citation in text
Citations in the text should be given in chronological order. Please ensure that every reference cited in the text is also present in the reference list (and vice versa).
Any reference exceptionally cited in the abstract must be given in full.
Unpublished results and personal communications are not acceptable.
References cited as 'in press' in the text implies that the item was accepted for publication; in this case DOI is compulsory.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web References
Web references http should be avoided as much as possible. If a web reference is used, as a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Reference style
At no stage during the submission will numbered referencing be accepted

In the Text: All citations of papers in the text should refer to:
1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors' names and the year of publication;
3. Three or more authors: first author's name followed by 'et al.' and the year of publication. Citations may be made directly
- Examples of papers in the text:
Kramer et al. (2010) have recently shown ...

Citations in the text may be made parenthetically groups of references should be listed first chronologically, then alphabetically for the same year.
- Examples of papers in a text:
(Bergaya et al., 1999; Allan and Jones, 1999, 2000a, 2000b; Allan, 2015) and (Tunney and Detellier, 1996; Letaief and Detellier, 2007; Tonl et al., 2007, 2009; de Faria et al., 2009, 2010, 2011; Yang et al., 2012; Matusik and Wcisło, 2014)

In the List: References should be arranged first alphabetically and then further sorted chronologically if necessary.
References from the same first author in the list should refer to:
Single author X, then two authors (X+ Y), then three authors (X+Y+Z), etc
More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.
- Examples of References to a journal publication in the list:


- Examples of References to a book and/or chapter in an edited book, in the list


Published proceedings are accepted, but not Abstracts published in book of Abstracts

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/applied-clay-science

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference Style
Text: All citations in the text should refer to:
1. **Single author:** the author's name (without initials, unless there is ambiguity) and the year of publication;

2. **Two authors:** both authors' names and the year of publication;

3. **Three or more authors:** first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first chronologically, then alphabetically for the same year.

Examples: 'as demonstrated Bergaya et al., 1999; Allan and Jones, 1999; Allan, 2000a, 2000b).

Kramer et al. (2010) have recently shown ....'

**List:** References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

**Examples:**

Reference to a journal publication:

Reference to a book:

Reference to a chapter in an edited book:

Reference to a website:

Reference to a dataset:

**Video**

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

**Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

**Supplementary material**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.
Research data
This journal requires and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. When sharing data in one of these ways, you are expected to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Mendeley Data
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

To maximise the visibility of your data, authors are invited to add a citation to their datasets by including a data reference in their Reference List as per the 'Data References' instructions elsewhere on this page.

Data in Brief
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 600 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

MethodsX
You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will
automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use this template to prepare your MethodsX article.

**Data statement**
To foster transparency, we require you to state the availability of your data in your submission if your data is unavailable to access or unsuitable to post. This may also be a requirement of your funding body or institution. You will have the opportunity to provide a data statement during the submission process. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**Additional Requirements for Manuscripts**
- Use double line-spacing
- Insert continuous line numbering

**AFTER ACCEPTANCE**

**Online proof correction**
Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

**Offprints**
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**AUTHOR INQUIRIES**
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com