

used to describe the characterization of materials made under non-ambient conditions, materials within systems, and of materials during change. These include terms such as *ex situ*, *in situ*, and *(in) operando*. The outcome of the project will be a recommendation for specific Latin terms to the IUPAC. This objective will benefit the materials chemistry community and empower IUPAC to make a decision on recommended terms for these. It is intended that the terminology will comply with the VIM and IUPAC Guidelines for Recommendations.

The task group comprises material characterization experts spanning both diffraction and spectroscopy and three Latin scholars. The project will make a recommendation for specific Latin terms to the IUPAC, compliant with IUPAC guidelines.

- Instrumentation & techniques have advanced faster than terms.
- Consistent language is needed to discuss sample characterization conditions.
- We need to clarify & resolve discrepancies for Latin terms describing materials characterization. Particularly for non-ambient conditions, within systems, and during change.



The task group welcomes input from the broader research communities on further terms to include, particularly those used inconsistently or ambiguously. If you are interested in participating or have an experimental condition or term that you think needs clarification, email to become involved in the project.

For more information and comments, contact Task Group Chair Vanessa Peterson <Vanessa.Peterson@ansto.gov.au> <https://iupac.org/project/2021-009-2-500>

IUPAC Provisional Recommendations

Provisional Recommendations are preliminary drafts of IUPAC recommendations. These drafts encompass topics including terminology, nomenclature, and symbols. Following approval, the final recommendations are published in IUPAC's journal *Pure and Applied Chemistry* (PAC) or in IUPAC books. During the commentary period for Provisional Recommendations, interested parties are encouraged to suggest revisions to the recommendation's author. <https://iupac.org/recommendations/under-review-by-the-public/>

Terminology and the naming of conjugates based on polymers or other substrates

A number of human activities require that certain complex molecules, referred to as active species (drugs, dyes, peptides, proteins, genes, radioactive labels, etc.), be combined with substrates, often a macromolecule, to form temporary or permanent conjugates. The existing IUPAC organic, polymer, and inorganic nomenclature principles can be applied to name such conjugates but it is not always appropriate. These nomenclatures have two major shortcomings: 1) the resulting names are often excessively long and 2) identification of the components (substrate, active species, and link) can be difficult. The new IUPAC naming system elaborates

rules for unambiguous and facile naming of any conjugate. This naming system is not intended to replace the existing nomenclature but to provide a suitable alternative when dictated by necessity. Although the rules are intended to be primarily applicable to the naming of polymer conjugates, they are also applicable to naming conjugates with other substrates, which include micelles, particles, minerals, surfaces, pores, etc. The naming system should be used when recognition of the substrate and active substance is essential and will also be useful when constraints of name length make the otherwise preferred IUPAC nomenclatures untenable. The proposed rules for the new naming system are complemented by a glossary of relevant terms.

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