

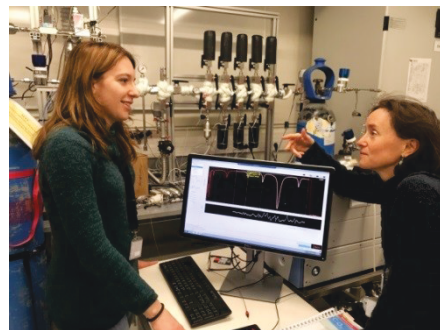
Visiting Scientist Opportunities in the BIPM Chemistry Department (2026-2027)



Developing and validating methods for the comparison of chemical and biochemical standards world-wide.

The International Bureau of Weights and Measures (BIPM) is an international organization established by the Metre Convention, through which Member States act together on matters related to measurement science and measurement standards.

The BIPM has a number of vacancies for short-term secondments in the Chemical Metrology Department, supporting the development of methods which will be used to compare national measurement standards and measurement capabilities for: greenhouse gases; major air quality gases; organic small molecule and peptide and protein primary reference materials and calibrators.



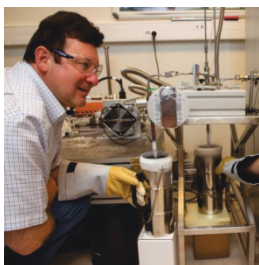
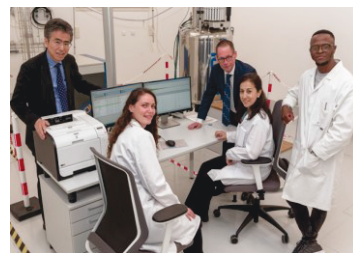
About the Chemistry Department

The BIPM chemistry laboratory activity focuses on gas standards for air quality and global atmospheric monitoring, and primary calibrators for clinical chemistry and laboratory medicine, food analysis, environmental analysis, forensics and pharma. The BIPM coordinates key comparisons and pilot studies prioritized by the CCQM, in response to NMI needs, for:

- greenhouse and air quality gas standards including their isotope ratios, for which the uncertainty of standards is critical, to ensure the accurate long-term, global monitoring of these species, including the BIPM key comparison BIPM.QM-K1 for surface ozone and BIPM.QM-K2 for atmospheric carbon dioxide;
- the purity assessment of organic calibrators for small molecules and peptides/proteins (source of traceability for measurements of the amount of organic species in a wide range of clinical, environmental, food, forensic and drugs in sport applications) and reference data for their value assignment.

Working on secondment at the BIPM

The BIPM offers a unique environment for a secondment. It is located in Sèvres, on the outskirts of Paris (France) and has an international staff of about 75. There is a wide range of accommodation available nearby, including furnished apartments. There is an excellent public transport network to central Paris, and the international airports are in easy reach.



Terms and conditions

Applications are welcome from employees of a national measurement institute, a designated institute or a relevant international organization. You would not be employed by the BIPM and would remain an employee of your institute.

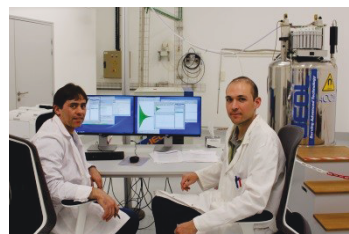
Applicants should make themselves aware of their home institute's funding schemes for visiting scientists, with the possibility of applying to the BIPM to contribute to additional living expenses.

Help will be given in finding local accommodation for the duration of the secondment.

Experience needed

The experience needed depends on the project.

A good level of English (spoken and written) is essential.



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No.	Programme Area	Name and Description of Secondment Project	Duration	Required experience of Visiting Scientist to undertake Secondment
C-1	Organic Analysis – Small Molecules	qNMR: Characterization of internal reference standards for ¹⁹F qNMR and ³¹P qNMR To extend the suite of internal standards ¹⁹ F qNMR and ³¹ P qNMR researchers will characterize candidate materials with the JEOL ECS-400 MHz spectrometer at the BIPM determining internal consistency of qNMR measurements and with proton qNMR values.	Minimum 3 months, preferably 6 months	<ul style="list-style-type: none"> Expertise in the theory and practice of NMR Background in analytical organic chemistry Experience in performing qNMR measurements. Practical knowledge of the operation of NMR spectrometers and the optimization of their operating parameters is essential. Previous experience with JEOL NMR systems and the Mnova NMR software an advantage.
C-2	Organic Analysis – Small Molecules	LC-MS(/MS) Impurity quantification in Drug Materials Visiting scientists are sought to develop LC-MS(/MS) methods for the identification and quantification of related substances in pure drug materials as part of a mass balance approach to material characterization.	6 months, preferably 12 months	Previous experience in the following: <ul style="list-style-type: none"> LC-MS(/MS) of small organic molecules Performing homogeneity and stability testing.
C-3	Organic Analysis – Small Molecules	LC-UV Impurity quantification in Drug Materials Visiting scientists are sought to develop LC-UV methods for the identification and quantification of related substances in pure drug materials as part of a mass balance approach to material characterization.	6 months, preferably 12 months	Previous experience in the following: <ul style="list-style-type: none"> LC-UV of small organic molecules Performing homogeneity and stability testing.
C-4	Organic Analysis – Large Molecules	Quantification of host cell proteins Visiting scientists are sought to develop LC-hrMS(/MS) methods using Max Quant Software to quantify host cell proteins within CCQM-K115 protein candidate materials.	6 months, preferably 12 months	<ul style="list-style-type: none"> Experience with liquid chromatography – high resolution mass spectrometry Previous experience in one or more of the following <ul style="list-style-type: none"> LC-MS(/MS) identification of peptides/proteins Peptide mapping Max Quant Software or similar.
C-5	Organic Analysis – Large Molecules	Quantification of Tryptic Digest Peptides Visiting scientists are sought to further develop quantification methods for tryptic digest peptide using (LC-IDMS), to support future pure primary peptide calibrator comparisons (CCQM-K115 series).	6 months, preferably 12 months	<ul style="list-style-type: none"> Experience with liquid chromatography – mass spectrometry Previous experience in one or more of the following <ul style="list-style-type: none"> LC-IDMS(/MS) of peptides/proteins Tryptic digest of proteins Previous experience with a SCIEX 6500+ would be an advantage.
C-6	JCTLM Database	JCTLM Database 2.0 validation and knowledge transfer To validate the operation of the web-based nomination and review system for the JCTLM database; organize testing within review teams; develop training videos and documents on the system.	Minimum 3 months (onsite or remote)	<ul style="list-style-type: none"> Experience with databases Experience with writing procedures for data handling and databases Experience with developing training materials.

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No.	Programme Area	Name and Description of Secondment Project	Duration	Required experience of Visiting Scientist to undertake Secondment
C-7	Gas and Isotope Standards and Comparisons	Extension of VPBD scale to -70 ‰ : development and validation To extend and validate the BIPM's SIRMGEN system for CO ₂ mixtures to produce standard samples at -70 ‰ using highly depleted gas and produce a stable reference point for scale realization. Analysis to be performed by IRMS with a MAT-253+ mass spectrometer.	6–12 months preferred	<ul style="list-style-type: none"> • Experience in IRMS operation and data analysis • Experience in gas handling and IRMS analysis • Experience with Isodat Script Language would be an advantage.
C-8	Gas and Isotope Standards and Comparisons	Linking $\delta^{18}\text{O}$ measurements to VPDB-CO₂ and VSMOW-VSLAP scales To extend and validate the BIPM's SIRMGEN system for CO ₂ mixtures to allow equilibration with water standards to produce CO ₂ gases with $\delta^{18}\text{O}$ values anchored to the VSMOW-VSLAP scale. Analysis to be performed by IRMS with a MAT-253+ mass spectrometer.	6–12 months preferred	<ul style="list-style-type: none"> • Experience in IRMS operation and data analysis • Experience in gas handling and working with isotopic water standards • Experience with Isodat Script Language would be an advantage • Experience with cryogenic trapping/water equilibration would be an advantage.
C-9	Gas Standards and Comparisons	NO₂ Dynamic Standards To develop FTIR methods to measure nitric acid permeation rates from permeation tubes used to produce NO ₂ in Nitrogen/Air standard concentrations.	6 months preferred	<ul style="list-style-type: none"> • Expertise in operation of FTIR using B-FOS and MALT • Experience in gas metrology • Experience in LabVIEW would be an advantage.
C-10	Gas Standards and Comparisons	Gas standard desorption studies To characterize CO ₂ desorption within gas cylinder standards as a function of pressure and potential isotopic fraction effects, measuring with OIRS systems and modelling adsorption isotherms to fit experimental data.	3 months preferred	<ul style="list-style-type: none"> • Experience in OIRS operation and data analysis • Experience gas handling • Experience with LabView or Python would be an advantage.

How to apply

Please contact the Department Director, Dr Robert Wielgosz (rwielgos@bipm.org) to discuss the project and confirm whether the secondment opportunity is still available. If you decide you would like to go ahead, please forward a copy of your CV so that the BIPM can confirm that the project would be suitable. The BIPM will then send a copy of a Secondment Contract which should be signed by the authorized person at your organization.

If the secondment opportunity is no longer available or the project is not suitable, the BIPM would be pleased to discuss opportunities for a secondment in the future.

