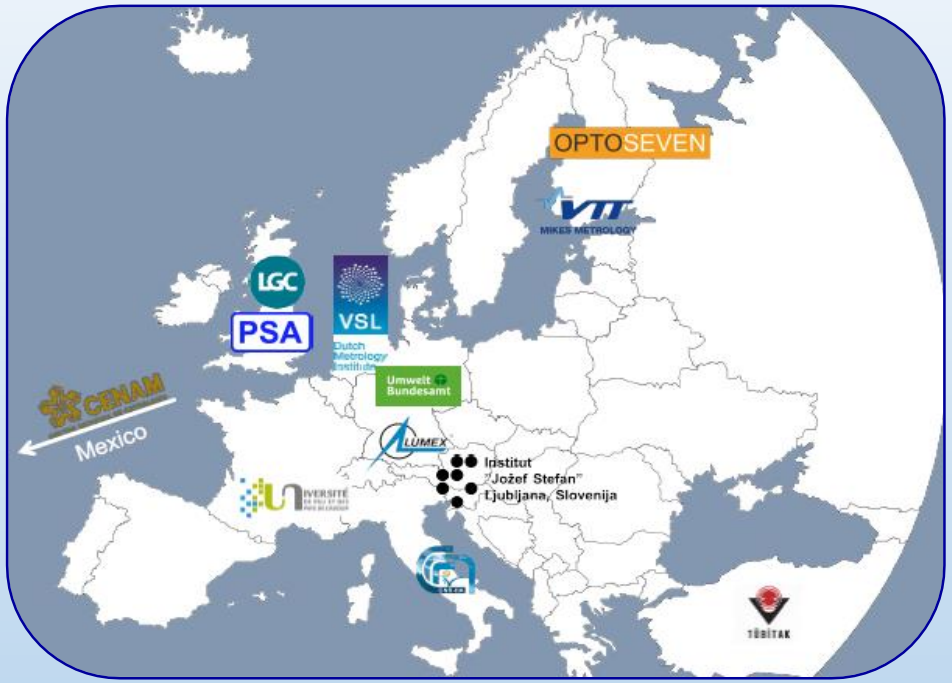
Metrology for oxidised mercury

The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

The overall goal of Metrology for oxidised mercury (MercOx) project is to develop traceable measurement procedures for the monitoring and control of mercury (Hg) and its different chemical forms, in both industrial flue gases and in the atmosphere, to improve the measurement comparability and uncertainty of Hg measurements.

The MercOx project provides crucial support to the enforcement of global and European regulations governing mercury pollution, and the protection of human health and the environment, as well as responding to the need to have for comparable Hg measurements as required by the Minamata Convention. The control and assessment of Hg concentrations in the environment requires the monitoring of all Hg species. Currently, traceable calibration methods only exist for elemental mercury (Hg(0)), but such measurements are also needed for oxidised Hg species, i.e. Hg(II). However, in most existing methods for Hg measurements, the different oxidised Hg species have to be reduced to the detectable elemental form (Hg(0)) in order to be quantified. MercOx addresses the problem of the direct measurement of gaseous Hg(II) which is a major focus of international research programmes for Hg source emission and ambient measurement and monitoring, through production an optimised and validated sampling methods for gaseous Hg species using traceable reference standards for both Hg(0) and Hg(II). Both have been significantly improve Hg speciation both in air and in flue gases, which is vital for the validation of models for predicting Hg emissions, transport, deposition and fate at the regional levels as well as on a global scale.

The outputs of this project will significantly improve Hg measurement and monitoring capabilities, which are necessary for a reliable and consistent basis for reporting Hg emissions, supporting the requirements of the of the relevant legislation as EU regulation and the Minamata Convention.



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Call: EMPIR Call 2016
Project Coordinator: Josef Stefan Institute
Duration: 42 months
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