

IUPAC Project Progress Report

Date: 5 November 2008

Task Group Leader: Maria Filomena Camões

Project number: 2004/2004-005-2-500

Project Title: Comparable pH measurements by metrological traceability

Series Titles: pH Measurements in Complex Matrices

Part I - pH Measurements in water quality monitoring and assessment;

Part II- pH Measurements of clinical, biochemical and environmental relevance

Report:

1. Current status of project:

- In progress,
- A WG meeting will be scheduled for the year 2009,
- Communication continues by email

2. Progress relative to 'milestones':

-Water quality monitoring and assessment; EUROMET project:
pH monitoring and assessment, for drinking water,
Questionnaire and interlaboratory comparison concerning sea water,
On site measurements.

Reports are being prepared and discussed by .The results of this project will influence the new issue of the German DIN 19267 on technical buffer solutions.

- **The Book**
Title- *How to Measure pH*(Under revision)
Chapters are undergoing revision and editing

3. Difficulties encountered (or concerns):

- General work overload of WG Members,
- Intensive work is required in the final path of the Project which would benefit from more dedicated intensive sessions

4. Projected completion date (documents ready for external review):

Late 2009

5. Please list all of the intended outputs and the dissemination plan for this project (viz. articles, CD, conference presentations; etc.). These may have been expanded since project approval:

a) The Book and DVD: *How to Measure pH*

b) The WG members continue to regularly submit publications to both national and international journals and to contribute to scientific meetings with presentations and debates

- Measurement for Life Science
EMRP- Symposium; PTB- Berlin, July 2008
- Metrology in Electrochemistry
Petra Spitzer and Stephen Seitz
Chemical Sensors 2008, Zurich, Switzerland, September 2008
- pH Standards A metrological point of view
Petra Spitzer
Workshop on Reference Materials, IAEA Sebersdorf, Austria, October 2008

- pH determination on a carbonate buffer by Harned cells of different designs
Maksimov, I; Ohata, M; Nakamura, S, [Hioki A](#), [Chiba K](#), [Spitzer P](#)
Accred Qual Assur, 13 (2008): 381-387,

- Improving the quality of potentiometric pH measurements
M.J.G.H.M.Lito, M. Filomena Camões; Catarina M. Viçoso
Accred Qual Assur, 12 (2007): 447-453

c) Participation in Laboratory exercises and projects, e.g.

CCQM-P111 study on Traceable determination of Practical Salinity and mass fraction of major seawater components

In cooperation with SCOR/IAPSO WG 127 on Thermodynamics and Equation of State of Seawater,

d) Scientific advice to specialized teams and institutions (e.g. metrological institutes, OIML) and to the community in general,

e) Supervision of post graduate training,

f) Engagement of several members of the pH Project in international multisectorial Task Forces aiming at developments in emerging areas:

- IAPWS, established, in Berlin, in September 2008 a

“Subcommittee on Seawater“ (SCSW) - Chairman Rainer Feistel

With 5 task groups, namely

Definitions and Equations for pH

Co-Chair: Giles Marion

Preparation of the very first SCSW meeting in Arnhem 2009 where the Group will meet, participating with a critical assessment of the state of the art concerning pH.

- Meeting of the IFCCC Working Group on ion selective electrodes in April 2008 (chaired by Lewenstam). This committee is working on a new document on pH measurement in serum. Ritu Katakya is responsible for this project.

6. If your project is within 6 months of completion, how do you plan to utilise any remaining budget for this project?

The remaining budget is intended, as initially planned and approved, and in a way similar to what has been happening until now,

- a) support of the organisation of Group meetings and scientific meetings attendance/registration, where the activities of the project are presented and discussed,
- b) preparation of a Workshop,
- c) edition of the “Book”,
- d) commemorative action of 100 years/pH-Sorensen

7. Work on this project may have identified new problems, issues, challenges, emerging topics, opportunities for related projects, etc. Please indicate these here so that the Division can follow up on them:

Upgrading/traceability of :

- salinity measurements and recommendations,
- seawater composition by modern instrumental methods,
- pH measurements in seawater,
in view of the undergoing global changes,
- IFCCC Working Group on ion selective electrodes, working on a new document on pH measurement in serum