

PROFICIENCY TESTING
IN
ANALYTICAL CHEMISTRY,
MICROBIOLOGY
AND
LABORATORY MEDICINE
Current Practice and Future Directions













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GRAND HOTEL
BERNARDIN







Assessment of Accuracy of Gravimetric Data: Proficiency Testing Data Analysis
By Patricia J. Clark, M. David, & Steven J. ...

Gravimetric analysis is one of the most common analytical techniques used in the laboratory. It is a simple and accurate method for determining the concentration of a substance in a sample. However, the accuracy of the results can be affected by a number of factors, including the quality of the reagents, the stability of the balance, and the skill of the analyst. This paper discusses the results of a proficiency testing program for gravimetric analysis, and provides a comparison of the results with the target values.

Method: The results of the proficiency testing program are presented in Table 1. The data show that the accuracy of the results is generally good, with most results falling within the target range. However, there are some outliers, and the results are not as consistent as they could be. This is likely due to the factors mentioned above.

Conclusion: The results of the proficiency testing program indicate that gravimetric analysis is a reliable method for determining the concentration of a substance in a sample. However, it is important to use high-quality reagents, a stable balance, and a skilled analyst to ensure the accuracy of the results.

Assessment Of Performance In Gravimetric Determinations: The Forgotten Technique

Gravimetric analysis is a classic analytical technique that has been largely replaced by instrumental methods. However, it remains a valuable tool for the determination of the concentration of a substance in a sample. This paper discusses the results of a proficiency testing program for gravimetric analysis, and provides a comparison of the results with the target values.

Method: The results of the proficiency testing program are presented in Table 1. The data show that the accuracy of the results is generally good, with most results falling within the target range. However, there are some outliers, and the results are not as consistent as they could be. This is likely due to the factors mentioned above.

Conclusion: The results of the proficiency testing program indicate that gravimetric analysis is a reliable method for determining the concentration of a substance in a sample. However, it is important to use high-quality reagents, a stable balance, and a skilled analyst to ensure the accuracy of the results.

MEASUREMENT TESTING SCHEMES

Why do we need measurement testing schemes? The answer is simple: to ensure the accuracy and reliability of our measurements. Measurement testing schemes are a systematic approach to the evaluation of measurement systems. They involve the use of reference materials, standardization, and proficiency testing to ensure that our measurements are accurate and reliable.

PROFICIENCY TESTING

Proficiency testing is a key component of measurement testing schemes. It involves the comparison of our results with those of other laboratories. This allows us to identify any biases or errors in our measurements, and to take corrective action if necessary. Proficiency testing is essential for ensuring the accuracy and reliability of our measurements.

IFCA's Incentive to External Quality-Assessment Scheme



A poster with a circular diagram and various icons, likely related to quality assessment or accreditation.

Joint Research Centre

IMEP-18 Sulphur in Diesel f

L. Van Herck, Y. Aregbe, P. Riboud



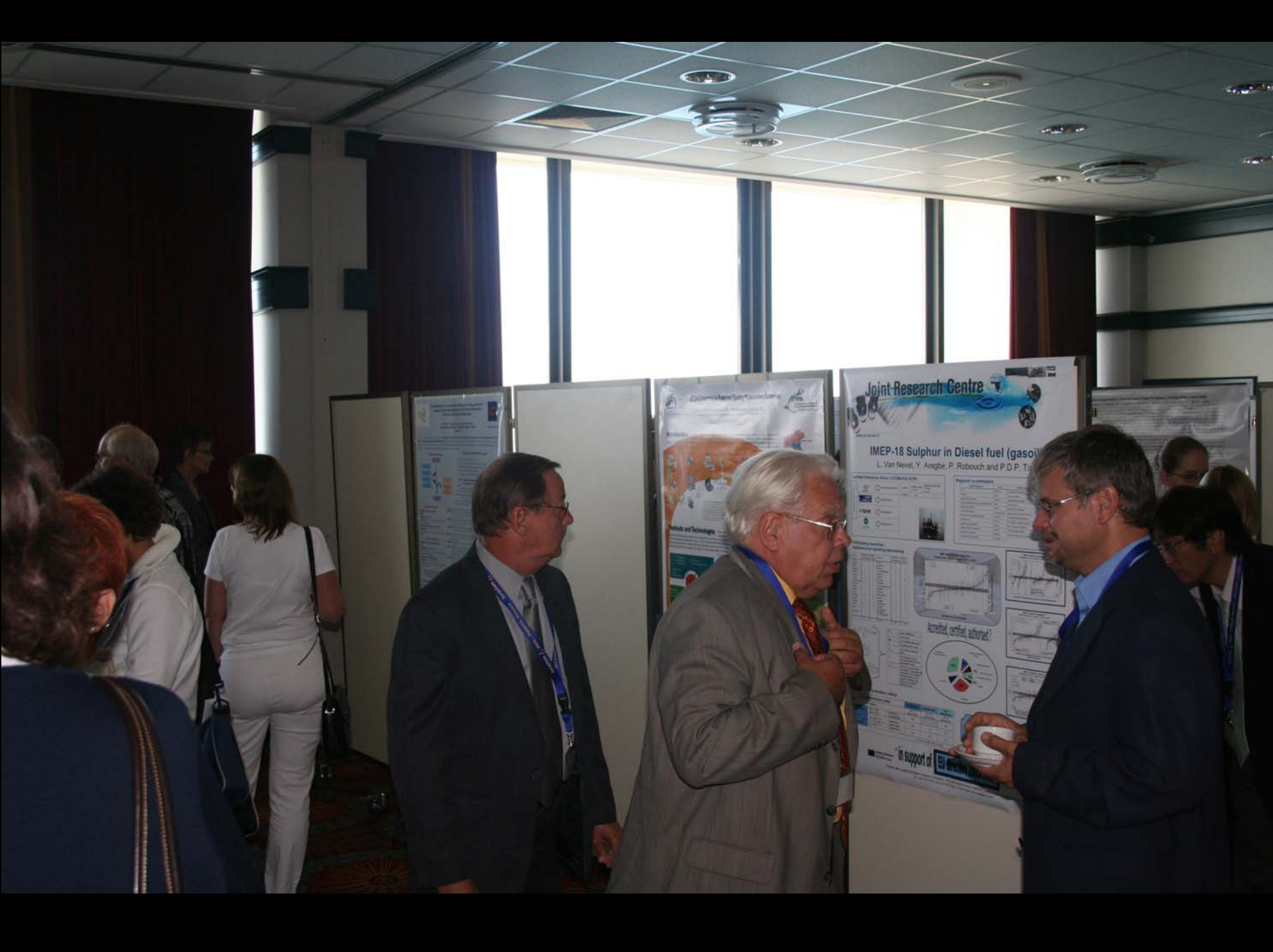
A poster with a blue and white design, featuring a globe and technical diagrams. It is titled 'IMEP-18 Sulphur in Diesel f' and lists authors L. Van Herck, Y. Aregbe, and P. Riboud.

Various posters and diagrams



A collection of smaller posters and diagrams, some partially visible, showing technical content and charts.





Joint Research Centre

IMEP-18 Sulphur in Diesel fuel (gasoline)

L. Van Nevel, Y. Aregbe, P. Robouch and P. D. P. T.

Project description



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MEASUREMENT TRACEABILITY AND ITS ROLE IN PROFICIENCY TESTING SCHEME – CASE STUDY FOR WATER ANALYSIS

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INTRODUCTION

- Testing laboratories ensure traceability of their results by using appropriate reference standards (commercial solutions or in-house solutions)
- They should demonstrate that their use of reference standards is appropriate and suitable for participation in proficiency testing scheme, based on reference value with established uncertainty

PROFICIENCY TESTING SCHEME, BASED ON REFERENCE VALUE

- Carried out in accordance with ISO Guide 43-1 and ILAC requirements
- 59 participating laboratories from Slovenia, Croatia and Hungary
- Measurands: nitrite nitrogen, nitrate nitrogen, chloride and sulphate in water
- Comparison between results of the PT scheme operating with reference value (reference value) and results of a PT scheme operating with consensus value (based on reference value)

TEST MATERIAL PREPARATION

- Matrix matching, analytes, pattern, physical status
- Homogeneity
- Stability

A new approach in assessing microbiological results in water-analysis proficiency testing

A.A. Roggen, J.M. van Berkel, G. de Jong and H.S. Tenenbaum

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Forces in progress

Introduction

Since early 2010 a few water research institutes, engineers and microbiological practitioners have been working on the development of a new approach in assessing microbiological results in water-analysis proficiency testing. The primary objective of this proficiency testing is to assess the performance of water analysis laboratories in terms of accuracy, precision, and overall testing quality. The report that participants receive contains the results of the proficiency testing and the statistical analysis of the results.

For almost 10 years the Dutch Proficiency Testing Institute (DPTI) has been organizing proficiency testing for water analysis. The accreditation measure participants receive is based on high quality samples (e.g. homogeneity, stability, comparability, suitable statistics, new users and requirements of the participating laboratories).

Assessment and evaluation of microbiological results

The first objective was the performance of a proficiency testing scheme for water analysis. The second objective was to assess the performance of participating laboratories by using a new approach in assessing microbiological results. The results of the proficiency testing are compared to the reference value (reference value) and the consensus value (consensus value).

$$Z = \frac{x - \bar{x}}{s}$$

With Z the result of laboratory i , x the result of laboratory i , \bar{x} the mean of all participating laboratories (group average) and s the standard deviation of all participating laboratories (group standard deviation).

- 1. All participants will report to the group average (group average)
- 2. All participants will report to the group average (group average)
- 3. All participants will report to the group average (group average)

Statistical analysis of microbiological results is based on the use of reference values and consensus values. The results of the proficiency testing are compared to the reference value (reference value) and the consensus value (consensus value).







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