

EuCheMS-DAC Study Group / Task Force Annual Report for 2017-2018

Study Group / Task Force Name: Quality Assurance
Study Group / Task Force Members and Affiliations: Elin L.F. Gjengedal (Head; EG)), Liaison to Eurachem, Norwegian University of Life Sciences, Norway Hendrik Emons (HE), Joint Research Centre (JRC), European Commission (EC), Belgium Constantina P. Kapnissi-Christodoulou (CKC), University of Cyprus, Cyprus Ricardo Bettencourt da Silva (RBS), Universidade de Lisboa, Portugal Ex officio members: Wolfgang Buchberger, and Marcela Alves Segundo (Secretary of DAC)
Objectives: Report on activities in metrology, quality assurance, accreditation and all areas related to quality issues of analytical chemistry. Liaison to other Divisions, working groups, working parties and governmental bodies. Accreditation of laboratories is common practice in industry and accreditation is introduced in order to sustain quality and reliability. Practices and procedures of quality assurance are considered also in science and the influence on quality of scientific results is evaluated and discussed. The aim of the Study Group 'Quality Assurance' is to follow the development of quality assurance and metrology in analytical chemistry and produce guidelines for assessing the quality of results, which ultimately can create a new basis for decision-making that may have an impact on the way research is carried out. Both statistics and metrology are currently considered for further developments and improvements as to meet contemporary demands for quality in analytical chemistry.
Activities and Outputs in 2017-2018 (e.g. reports, publications, seminars, meetings): Several international documentary standards which are highly relevant for advancing analytical quality assurance and further harmonising the implementation of metrological concepts, such as measurement uncertainty, have been published in the reporting period. The most important one is the new edition of ISO/IEC 17025 on general requirements for the competence of testing and calibration laboratories, but it is also worth to mention ISO 21748:2017 on guidance for the use of repeatability, reproducibility and trueness estimates in measurement uncertainty evaluation. The application of the standards is now facilitated among laboratories, accreditation bodies and other stakeholders of the analytical community. <i>RBS participated in the following meetings:</i> A Master Class for those train staff from accredited laboratories, Caparica (Portugal), 24-26 September 2017. 6th International Proficiency Testing Conference, Cluj Napoca (Romania), 4-6 October 2017. 7.º Encontro Nacional da SPMet – As medições para os transportes, Lisboa (Portugal) 17 November 2017. Eurachem Workshop: Data – Quality, Analysis and Integrity, Dublin (Ireland) 14-15 May 2018. <i>Publications:</i> Barwick, V., Ellison, S.L.R., Gjengedal, E. <i>et al.</i> <i>Accred Qual Assur</i> (2017) 22: 253. https://doi.org/10.1007/s00769-017-1286-4 . Cordeiro, R.M.S., Rosa, C.M.G. & Bettencourt da Silva, R.J.N. <i>Accred Qual Assur</i> (2018) 23: 57. https://doi.org/10.1007/s00769-017-1296-2 . Dadamos, T.R.L., Damaceno, A.J., Fertoni, F.L., Silva, R.J.N.B. <i>Tchê Química</i> (2018) 15: 196. Dadamos, T.R.L., Damaceno, A.J., Fertoni, F.L., Silva, R.J.N.B. Standard Addition Method with Cumulative Spikes: Uric acid determination in human serum by voltammetry with optimised uncertainty. <i>Accred Qual Assur</i> (Accepted for publication 07/2018). Gjengedal, E.L.F. QUALITY ASSURANCE Accreditation. In: P. Worsfold, C. Poole, A. Townshend and M. Miro (Eds.) <i>Encyclopedia of Analytical Science</i> 3 rd Edition, Elsevier Science Publishers, Amsterdam (2018). Kuselman, I., Pennechi, F., Silva, R.J.N.B., Hibbert, D.B. <i>Talanta</i> (2017) 164: 189. Kuselman, I., Pennechi, F., Silva, R.J.N.B., Hibbert, D.B. <i>Talanta</i> (2017) 174: 789. Kuselman, I., Pennechi, F., Silva, R.J.N.B., Hibbert, D.B., Anchutina E. Total risk of a false decision on conformity of an alloy due to measurement uncertainty and correlation of test results, <i>Talanta</i> (Accepted for publication 07/2018). Pennechi, F., Kuselman, I., Silva, R.J.N.B., Hibbert, D.B. <i>Chemosphere</i> (2018) 202: 165. Rosa, N.F., Monteiro, O.C., Camões, M.F.G.F.C., Silva, R.J.N.B. <i>Accred Qual Assur</i> (2017) 22: 217. Trapmann, S., Botha, A., Linsinger, T.P.J., Mac Curtain, S., Emons, H. <i>Accred Qual Assur</i> (2017) 22: 381.
Activities planned for 2018-2019: 1. Follow activities of Eurachem and contribute to meetings and publications, e.g. The Eurachem General Assembly and associated working group meetings 2. Publish results of quality assurance in appropriate journals 3. Publish two pages technical notes (EuCheMS-DAC-QA) that present simple QA tools and concepts.
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