

Abstracts**Damage in Water/Steam Cycles – Often a Matter of Solubility**

Hans-Günter Seipp and Frank-Udo Leidich

Water and steam, the working fluids in the water/steam cycles of power plants, nowadays are characterized by a high degree of purity. Nevertheless, from time to time, damage is detected on plant components that is attributable to a substantial localized accumulation of "contaminants." This report presents a number of examples where typical damage was found, but the effects of the process-dependent varying solubility of substances had not fully been taken into consideration.

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pH and CO₂ Determinations Based on Power Plant Conductivity Measurements

David M. Gray

Previous work has focused on major improvements in the accuracy of conductivity measurements and on the development and benefit of multi-parameter on-line analytical instrumentation. This background as well as continuing work now provide additional parameters that can be derived from accurate specific, cation (acid) and degassed cation (acid) conductivity measurements.

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On-Line Analysis of ETA and Organic Acids in Secondary Systems of PWR Plants

Masahiko Kurashina, Hideo Uzawa, Koya Utagawa, and Hiroshi Takaku

To reduce the iron concentration in the secondary water of plants with pressurized water reactors (PWRs), ethanolamine (ETA) is used as an alkalizing agent in the secondary cycle. An on-line ion chromatography (IC) monitoring system for monitoring concentrations of ETA and anions of organic acids was developed, its performance was evaluated, and verification tests were conducted at an actual PWR plant. It was demonstrated that the concentration of both ETA and anions of organic acids may be successfully monitored by IC in PWR secondary cycle streams alkalized by ETA

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Is Pittsburgh (PA) Worth a Trip for a Power Plant Chemist?

Albert Bursik

In this paper, power plant chemistry-related papers presented at the 65th International Water Conference® held in Pittsburgh (PA) last year are reviewed. The review of these papers results in a recommendation to attend the conference this year again (Orlando, FL, October 9–13)..

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Energy Utilization of Biofuels Based on Sludge and Lignite

Pavel Kolat, Dagmar Juchelková, and Anna Nezhodová

Energy utilization of alternative fuels is one of the main tasks in the development of renewable sources in the European Community and the Czech Republic. The topics of the research consist of combustion tests in an experimental pilot plant with an atmospheric fluidized bed located at the Technical University, Dresden, Germany, for the lignite and sewage sludge, and thermo-analytical studies of biofuels. Recommendations for the suitability of thermal disposal of wastes in the atmospheric fluidized bed are presented with respect to minimizing the harmful emissions. It may be assumed from results that combustion with a content of 15 % biofuels is applicable in the large fluidized bed boilers installed in the Czech Republic.

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The Conductivity Cell and the Determination of Cell Constant in Pure Water Systems

Eric V. Maughan

There are many manufacturers of conductivity measurement systems for pure water, all of which work on the same physical principles. However, what is often confusing is the range of conductivity measurement cells or sensors and how to select the most appropriate cell constant for a particular application. This paper covers the theory of conductivity measurement and the determination of cell constants.

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