

第26回

環境化学討論会

プログラム集

26th Symposium on Environmental Chemistry Program and Abstracts

健康長寿社会を支える環境化学の未来

—静岡からの発信—

日時 2017年6月7日(水) ~ 9日(金)

Dates: 7th-9th June 2017

会場 静岡県コンベンションアーツセンター「グランシップ」

Venue: Shizuoka Convention & Arts Center "GRANSHIP"

後援 静岡県立大学

Supported by University of Shizuoka

協力 SETACジャパン

英国王立化学会

静岡県立大学食品栄養科学部

In cooperation with Society of Environmental Toxicology and Chemistry,
Royal Society of Chemistry, and School of Food and Nutritional Sciences,
University of Shizuoka

主催 一般社団法人日本環境化学会

Organized by Japan Society for Environmental Chemistry



度を測定した。支流河川の河川堆積物における ^{137}Cs 濃度は時間経過に伴って減少したが、阿武隈川本流の下流側の川幅が広く流速の遅い地点では ^{137}Cs 濃度が増加した。したがって、今後阿武隈川本流の下流部滞水域における ^{137}Cs 蓄積が問題になることが示唆された。

3D-08 100142

秋田県内の水環境における放射性セシウムに関するモニタリング調査

○玉田 将文 (秋田県 生活環境部健康セ)

東京電力福島第一原発の事故後、環境中の放射性セシウムに関するモニタリング調査が多数実施されてきたが、秋田県内の水環境における調査は殆どない。そこで本調査では、秋田運河等の水環境試料を対象に、放射性セシウムのモニタリング調査を実施した。その結果、放射性セシウムを検出したが、その濃度レベルは環境省の既存調査データと比較すると低い値であり、秋田県への放射性セシウムの拡散は小さいものと考えられた。

International Session 6月9日(金) Room E会場 (9F 904) 9:30 ~ 11:45

**3E-1st & 2nd
International Session**

3E-01 9:30-9:50 100328

A Highly Sensitive On Line Sensor for Phosphate Monitoring in Freshwaters

○Weijia Li, Irina Okonskaia, David Bowman
(Health Canada)

Bioavailable fraction of phosphate concentrations is responsible for algal growth in water. Traditional methods of measuring phosphates in water usually involve a series of procedures, sample grabbing, transport, storage, handling and analysis of the samples in a laboratory using sophisticated instrument. These tedious approaches are costly, labour intensive, less sensitive ($>100 \mu\text{g L}^{-1}$) and prone to cross contamination over the procedures.

An on line monitoring system combining the in situ preconcentration and direct on site colorimetric detection is then set up. In situ preconcentration by the solution selectively accumulated bioavailable phosphates and allows use of inexpensive and small sized LED for colorimetric detection with data transmitted wirelessly. This allows phosphate concentrations to be measured with detection limit of $\sim 1 \mu\text{g L}^{-1}$ which is below usual concentrations in waters. A prototype sensor system has been developed in our lab and applied in natural freshwaters.

3E-02 9:50-10:10 100164

Mercury levels in house dust samples from Estarreja region, NW Portugal

○M. Ramiro Pastorinho¹, Rafael Barros², Tatiana Silva³, Raquel Amaro⁴, Sara Miranda⁵, Carla Valente⁶, Ana Catarina Sousa⁷, on behalf of RESPIRA Group

(¹Laboratory of Toxicology, Graduate School of Veterinary Medicine, Hokkaido University, Japan, ²Health Sciences Research Centre (CICS), University of Beira Interior, Portugal, ³Department of Biology, University of Aveiro, Portugal, ⁴Environmental Health Department, National Institute of Health, Porto, Portugal, ⁵Escola Superior de Saúde, University of Aveiro, Portugal, ⁶Centro Hospital do Hospital do Baixo Vouga, EPE; Agrupamento de Centros Saúde Baixo Vouga, ⁷CICECO and Department of Chemistry, University of Aveiro, Portugal)

Estarreja is a highly industrialized region in NW Portugal well known for its historical mercury contamination. However, the impacts of this contamination in human health have seldom been addressed, and there is an increased incidence of non-communicable diseases (NCDs). Hence, a project (RESPIRA) on the environmental determinants of pulmonary diseases was launched, monitoring levels of environmental contaminants in environmental and biological samples. This work describes results on the levels of mercury in $63\mu\text{m}$ house dust fraction. Mercury was detected in all the samples analyzed with values ranging from 93 to 9098 ng/g. These levels are generally higher than the previously reported for another Portuguese city (Covilhã, Central Portugal: 140-1080 ng/g) and other European cities, but lower than those available from China. Our results demonstrate that dust has the potential to be a source of mercury and that preventive measures should be adopted by the most vulnerable groups of the population.

3E-03 10:10-10:30 100336

Metal from indoor respirable particulate matter and its health risk in industrial and rural areas of Thailand

○Rattapon Onchang, Mallika Panyakapon and Pongsri Paopuree
(Department of Environmental Science, Faculty of Science, Silpakorn University, Nakhon Pathom, Thailand)