Lead Author e-mail: *zanpolko@pg.gda.pl*

Title: *Determination of metals concentration levels in the surface water samples collected in the vicinity of The Hornsund Fiord (Polish Polar Station)*

Katarzyna Kozak[1], Sara Lehmann[1], Żaneta Polkowska[1], Marek Ruman[2], Wiesława Ewa Krawczyk[2], Jacek Namieśnik[1]

[1]***Department of Analytical Chemistry, Chemical Faculty, Gdansk University of Technology, 11/12 Narutowicza St., 80-233 Gdańsk***

[2]*Faculty of Earth Sciences, University of Silesia, 60 Bedzinska St., 41-200 Sosnowiec, Poland*

The Arcticis one of the most remote and least populated regions on earth and should, therefore, be one of the least impacted with chemical residues of human activity. Analyses of pollutants deposited in waters in the Arctic region is a key element in monitoring of the environment quality and enables taking proper actions aimed at preventing their negative impact. Furthermore, the research may be used as a tool in forecasting short term changes taking place in the natural environment.

Concentrations of metals: Li, Be, B, Na, Mg, Al, K, Ca, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Rb, Sr, Mo, Ag, Cd, Sn, Sb, Cs, Ba, Tl, Pb and U were determined in surface waters from Fuglebekken basin regions in Spitsbergen, Svalbard. The Fuglebekken basin is situated in the southern part of the island of Spitsbergen(Norwegian Arctic), on the Hornsund fjord (Wedel Jarlsberg Land). Surface waters were collected from 24 tributaries and from the main stream water in the Fuglebekken basin between 2009 and 2011. Samples were collected from numerous water flows, inflows, streams and lakes situated in the moraines region.

The concentrations of Li, Al, V, Cr, Mn, Cu, Sr, Se, Rb, Zn, As in samples of surface waters were found to be lower than what is commonly found in Central Europe. The Arctic environment is influenced by chemical elements of both anthropogenic and natural origin, from remote as well as local sources. Spitsbergen seems to be affected by airborne pollutant originating in western and eastern Europe and to a lesser extent in North America but the contribution from local sources of heavy metals must be elucidated.