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Proceedings of the Third International Symposium on Beryllium Particulates and Their Detection November 17–19, 2008, Albuquerque, New Mexico

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OVERVIEW

The *Third International Symposium on Beryllium Particulates and Their Detection* was held November 17–19, 2008, at the University of New Mexico in Albuquerque. This conference, which drew 80 registrants, was arranged by the Beryllium Health and Safety Committee (BHSC) under the chairmanship of Amy Ekechukwu of Savannah River National Laboratory (SRNL), and Melecita Archuleta of Sandia National Laboratory (SNL).

The symposium, which is held triennially, followed two previous symposia that were held in Santa Fe, New Mexico, in 2002, and in Salt Lake City, Utah, in 2005. The organizing committee comprised symposium co-chairs and seven other members of the BHSC. The symposium was sponsored by numerous organizations having interest in beryllium health risks and related issues. A list of the sponsors and exhibitors, whose support was invaluable and is very much appreciated, follows.

Health risk due to beryllium exposure is an important matter of concern in the United States and is an emergent issue globally. The symposium served as a technical forum for scientists, medical researchers, industrial hygienists, and other public health professionals to share current information about detecting beryllium particles and the health risks posed by exposure to beryllium. A call for papers was disseminated internationally, and ultimately, more than two dozen abstracts were received. The format of the symposium included oral technical presentations, vendor displays, and a tutorial on surface sampling.

On the first day of the symposium, a beryllium surface sampling tutorial was presented by Geoff Braybrooke (U.S. Army Center for Health Promotion and Preventive Medicine [USACHPPM]), Steve Jahn (Savannah River Site), and Kevin Ashley (National Institute for Occupational Safety and Health). On the second day, a plenary session initiated the main portion of the symposium with an overview of beryllium research.

An invited address by Paul Wambach (U.S. Department of Energy [DOE]) provided a history of beryllium exposure assessment. This was followed by a presentation on beryllium sampling issues and industrial hygiene aspects by Steve Jahn. Mike Brisson (Savannah River Nuclear Solutions) then gave an overview of beryllium analytical chemistry. Peggy Mroz (National Jewish Health) concluded the session with an overview of medical and epidemiologic issues.

The first technical session dealt with medical and epidemiologic aspects; it included seven papers and was chaired by Peggy Mroz. Anthony James (Washington State University) presented a paper on beryllium in a repository of tissues from DOE weapons-site workers. Caroline Muller (University of Montréal) gave a talk on beryllium toxicity in relation to chemical form and particle size. Mike McCawley (West Virginia University) followed with a discourse on particle size-selective sampling for beryllium.

Akshay Sood (University of New Mexico) discussed his work on corticosteroid therapy in patients with chronic beryllium disease (CBD). Anu Chaudhary (Los Alamos National Laboratory [LANL]) spoke on the intracellular toxic effects of beryllium. Mike Van Dyke (National Jewish Health) presented on genetic effects in beryllium disease risk. The final paper in this session was given by Elizabeth Hong-Geller (LANL), whose talk covered response of airway epithelial cells to beryllium exposure.

The third day of the symposium focused mainly on analytical issues. A session on sampling and sample preparation was chaired by Kevin Ashley and included nine presentations. In succession, Mike Brisson, Melecita Archuleta, and Warren Hendricks (Occupational Safety and Health Administration) discussed consideration of wall deposits inside workplace air samplers. Kevin Ashley followed with a presentation on interlaboratory data from inductively coupled plasma mass spectrometry (ICP-MS) measurement of beryllium.

Cheryl Morton (AIHA®) and Brian Connor (American Association for Laboratory Accreditation) then discussed

laboratory accreditation issues relating to beryllium analysis. Albert Liabastre (USACHPPM) gave a discourse on “fit for purpose” beryllium analysis data. Charles Davis (Envirostat) then provided an “exposé” on beryllium detection limits and their implications. Jim Robbins (DOE National Energy Technology Laboratory) concluded the session with a presentation on multivariate spectral deconvolution techniques in beryllium determination by inductively coupled plasma optical emission spectrometry (ICP-OES).

In the session on new research advances and needs, chaired by David Weitzman (DOE), 10 papers were given. Marc Kolanz (Brush Wellman) began with a presentation on an interactive guide for beryllium worker health and safety. Maureen Bernard (SRNL) discussed a new method for removing spectral interferences to beryllium in ICP-OES. Mark McCleskey (LANL) followed with a presentation on beryllium speciation under physiological conditions. Michael Winchester (National Institute of Standards and Technology) then talked about the certification of a newly available beryllium oxide Standard Reference Material (SRM).

A series of papers on trace beryllium measurement by fluorescence followed. Two presentations by Anoop Agrawal (Berylliant, Inc.) discussed (1) extraction and determination of beryllium from “large” refractory beryllium oxide particles, and (2) elimination of fluorescence impurities in contaminated samples. Tom Oatts (Y-12 National Security Complex) gave two presentations about a new high-throughput fluorescence instrument for beryllium determination in workplace samples. Kevin Ashley’s talk on the determination of beryllium in soils by extraction and fluorescence measurement was followed by Mike McCawley’s discussion of beryllium research needs.

As co-editors of this special issue, we managed the transition from a successful symposium to publication of the proceedings in a peer reviewed forum. Symposium presenters were encouraged to write up their presentations in manuscript form for consideration for publication in this special issue of the *Journal of Occupational and Environmental Hygiene*.

Reviews as well as original research papers were considered. Column articles and brief communications were also solicited. The papers published here are those that were peer reviewed and ultimately accepted for publication.

Sincere appreciation is extended to the symposium organizers and the peer reviewers for their dedication and efforts in producing this contribution to the scientific literature. Special thanks are also due to the *JOEH* editorial staff. We are especially indebted to the sponsors for their support in hosting the symposium and the subsequent publication of the proceedings. It is earnestly hoped that this publication will ultimately make a significant impact toward the elimination of beryllium sensitization and disease.

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