
국제학회 및 학술세미나 연구결과 발표를 위한 국외출장 계획

산업재해예방

안전보건공단



산업안전보건연구원 직업건강연구실

국제학회 및 학술세미나 연구결과 발표를 위한 국외출장 계획

1. 목 적

제35회 국제환경역학회 연차학술대회(The 35th Annual conference of international society for environmental epidemiology, ISEE)에 참가하여, 연구결과를 발표하고 국제환경역학 관련 전문가 교류를 통해 최근 연구동향과 최신지견을 공유·습득하고자 함.

2. 출장지 : 가오슝, 타이완.

Kaohsiung Exhibition Center

3. 출장자 : 2명

- 직업건강연구실 원용림 연구위원(3급)
- 직업건강연구실 이화연 과장(4급)

4. 출장기간 : 2023년 9월 17일(일)~9월 21일(목) (4박 5일간)

- 학회 : 2023년 9월 17일(일)~9월 21일(목)

5. 주요 수행사항

- 국제환경역학회 테마인 'Connecting the east and the west, one health in one planet' 와 관련하여 연구동향 파악 및 연구능력 향상
 - 심포지엄, 키노트 및 워크숍 참가를 통하여 역학 전문가 집단과 교류 및 최신 연구 동향 파악
 - 향후 산업보건, 환경위기 및 재난 대응을 위한 역학 연구의 방향성과 미래 가능성 등에 대한 토론 참석

○ 출장자의 수행사항

- 학회 소주제 중 각자의 연구수행 분야와 관련된 주제의 세션에 참가하여 최신 정보 습득 및 연구자 간 교류
- 학술결과 포스터 발표(총 2건)

연번	발표자	발표주제
1	원용림	Results of Improvement of Work Environment in Indium Handling Workplaces in Korea Confirmed by Biological Monitoring
2	이화연	Analysis of Cardiovascular and Respiratory System Diagnosis Results of Some Secondary Battery Workers in Korea

- 발표자료 1

Results of Improvement of Work Environment in Indium Handling Workplaces in Korea Confirmed by Biological Monitoring

Yonglim Won, Hwayeon Lee

Occupational Health Research Bureau, Occupational Safety and Health Research Institute, Ulsan, Republic of Korea

BACKGROUND AND AIM: Indium is a key material used in display manufacturing. After indium lung disease was reported in Japan in 2003, a study was conducted in Korea in 2012 to confirm lung disease of indium handling workers. A number of workers with interstitial lung disease were identified, and based on the research results, the concentration limit of serum indium was suggested as 1.2 µg/L. Continuous improvement of the workplace has been carried out, and from 2021, indium handling workers must undergo medical checkups prescribed by the law. Through the comparison of serum indium concentration, we tried to compare the results of improvement in the working environment of indium handling workplaces.

METHOD: After institutionalization, workers' serum indium concentrations were compared with those at the time of the first survey in 2012. The serum indium concentrations of 3 target manufacturers, 3 display manufacturers, and 4 indium recyclers that participated in the 2012 survey were compared with those in 2022.

RESULTS: The average concentration of the entire comparative workplace in 2012 and 2022 was 4.8 µg/L and 0.7 µg/L, confirming that the serum indium concentration decreased after the improvement of the working environment. By industry, the indium recyclers showed the largest decline from 14.3 µg/L to 4.1 µg/L, and the target manufacturer decreased from 4.2 µg/L to 2.1 µg/L. Display manufacturer did not show any significant change. In some workplaces or in some workers who participated in the 2012 survey, the serum indium concentration was higher than in 2012.

CONCLUSIONS: Since the 2012 survey, until 2021 when work environment evaluation and medical checkup were mandatory, each manufacturer has made a lot of efforts to improve the working environment and believes that the desired results have been achieved. However, some of the small companies still need improvement.

Keywords: Indium, Improvement of Work Environment

Details

Status : Accepted:Poster

Preferred Presentation Type : Poster Presentation

Abstract Category/Topic : Chemical exposures » Heavy metals

Language : English

Saved : 09.03.2023 13:42:25

Submit : 13.03.2023 03:30:58

Confidential to Author and Editor

Presenter : Yonglim Won (herhand@gmail.com)

- 발표자료 2

Analysis of Cardiovascular and Respiratory System Diagnosis Results of Some Secondary Battery Workers in Korea

Hwayeon Lee, Yonglim Won, Junhyeok Choi, Youngjoong Park

Occupational Health Research Bureau, Occupational Safety and Health Research Institute, Ulsan, Republic of Korea

BACKGROUND AND AIM: This survey was conducted as a preliminary survey to conduct a health care survey for workers at secondary battery manufacturing and regeneration sites conducted in Korea from 2023-24. In the manufacture of lithium-based secondary batteries, harmful factors to special health diagnosis, such as nickel, cobalt, manganese, and dichloromethane, are used. In addition, various raw materials such as lithium, carbonate, carbon nanotubes, and the like, which are not clearly disclosed, are mixed and used. Organic compounds and dust are feared to be exposed in some manual processes and cardiovascular and respiratory hazards, including night work.

METHOD: Six work places were selected in consideration of industries such as anode, cathode material, electrolyte. 652 cases of special health diagnosis data that were not normally judged by the cardiovascular system or respiratory system were analyzed.

RESULTS: The most harmful factors exposed to workers at the surveyed workplace were night work, followed by aluminum and dichloromethane, and more than 60% of workers performed night work. Workers exposed to cardiovascular harmful factors had significantly higher blood pressure, fasting blood sugar, and triglycerides compared to the general population group, but the rate of abdominal circumference exceeding the standard was low. The proportion of workers who were not normal in the respiratory system was similar to or slightly lower than that of the general population group.

CONCLUSIONS: Many of the workers are exposed to cardiovascular harmful factors along with night work, which is feared to increase the burden factor. Most of the processes are automated, so the concentration of harmful factors exposed is expected to be low, but it is judged that it is necessary to evaluate workers' health effects during unstructured processes such as maintenance processes. Through a survey on health care status, it will closely grasp the condition of workers and create health care guides for each industry.

Keywords: Secondary battery industry, Cardiovascular disease, Respiratory disease

Details

Status	: Accepted:Poster
Preferred Presentation Type	: Poster Presentation
Abstract Category/Topic	: Chemical exposures » Mixtures
Language	: English
Saved	: 09.03.2023 09:21:48
Submit	: 13.03.2023 03:23:10

Confidential to Author and Editor

Presenter : Hwayeon Lee (yes9297@naver.com)

6. 출장일정

일 정	내 용	비 고
○ '23. 9. 17(일)	○ 출국(인천 → 가오슝) - 학회 등록	
○ '23. 9. 18(월)	- Scientific sessions 1) Keynote lecture 2) Keynote Panel discussions 3) Parallel Symposia & Oral Sessions	
○ '23. 9. 19(화)	- Early morning sessions - Scientific sessions 1) Keynote lecture 2) Keynote Panel discussions 3) Parallel Symposia & Oral Sessions	- Poster presentation 15:00~16:00
○ '23. 9. 20(수)	- Early morning sessions - Scientific sessions 1) Keynote lecture 2) Keynote Panel discussions 3) Parallel Symposia & Oral Sessions	
○ '23. 9. 21(목)	○ 입국(가오슝 → 인천)	

※ 일자별 세부 프로그램 및 참여 세션은 변경될 수 있음.