

WHO questionnaire and Neurobehavioural Core Test Battery respectively.

Results: Thirteen of twenty points of monitoring showed level above Permissible Exposure Limit (Range $<1\mu\text{g}/\text{m}^3$ to $768.88\mu\text{g}/\text{m}^3$). Median blood lead levels for exposed and non-exposed workers were 11.10 and $9.45\mu\text{g}/\text{dL}$ respectively. Exposed workers have higher proportion of forgetfulness (29.5%), excessive sweating (13.6%), diarrhea (15.9%), weakness of lower body (25.0%) and change of sense of taste (9.1%) but none was significant. Exposed workers scored lower in Benton Visual Retention, Digit Span, Pursuit Aiming, Digit Symbol, and Santa Ana Manual Dexterity Non-dominant Hand. Only Pursuit Aiming Test was significant ($p=0.018$). There were inverse associations in workers in the higher blood lead level category ($\geq 12.2\mu\text{g}/\text{dL}$) in the tests of Pursuit Aiming, Simple Reaction Time, Profile of Mood States (total score), Tension-Anxiety, Depression-Dejection and Vigour, in reference to workers in the category of lower blood lead level ($\leq 8\mu\text{g}/\text{dL}$) but these associations were not significant. Conclusion: The workers in the studied battery manufacturing plants are exposed to lead at varying level depending on the sections in the factory but they were protected from this exposure. There were no significant inverse association between blood lead levels and neurobehavioural performances in battery manufacturing plant workers.

FP-144

Female Reproductive Effects among Women Exposed to Polychlorinated Biphenyls and Phthalates

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Polychlorinated biphenyls (PCBs) may affect reproductive function. Besides, increasing evidences indicated association between phthalate and reproductive effects. Unfortunately, Humans are probably exposed to both PCBs and phthalates. The purpose was to determine whether the interaction between PCBs and phthalate to occur female reproductive damages. A mass poisoning occurred in Taiwan due to PCBs/PCDFs-contaminated cooking oil, and was called Yucheng. We followed the exposed individuals and a reference group. There are about 600 subjects interviewed by well-trained nurses and invited to undergo a field study. These tests in the field study included five phthalate metabolites (mono methyl phthalate [MMP], mono ethyl phthalate [MEP], mono butyl phthalate [MBuP], mono benzyl phthalate, [MBzP], and mono (2-ethylhexyl) phthalate [MEHP]). The final study subjects consisted of 71 currently menstruating women. Data analysis used multiple linear/logistic regressions. Totally 423 women of Yucheng women on average 0.2 (95% CI: $0.0\sim 0.5$; $p=0.03$) days shorter than the menstrual cycles of the reference women. Among 71 women showed shorter cycle in higher MMP exposure women (28.2 days vs.

30.5 days; $p=0.0041$) and PCBs exposed can modify the effect of MMP in menstrual cycle length. Likewise, the women with higher MEHP exposure had significantly higher prevalence rate of dysmenorrhea than reference women (29% vs. 67%; $p=0.02$). In addition, PCBs maybe prolonged time to pregnancy in Yucheng women (odds ratio: 2.34; 95 % CI: $1.23\sim 4.59$), no relationship between Phthalates and subfertility. In conclusion, the present findings PCBs and Phthalates can indicate negative effects and may be have interaction function in female reproduction.

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Photocatalytic Degradation of Multidrug Resistant Bacteria with Titanium Dioxide Under UVA Irradiation

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In recent decades, the rise of antibiotic-resistant bacteria was one of the most significant public health problems. When the bacteria become resistant to more than one drug, it is called multidrug-resistant (MDR) bacteria. The purpose of this study is to use UV light irradiated TiO_2 for three MDR bacteria (methicillin-resistant *Staphylococcus aureus* (MRSA), MDR *Acinetobacter baumannii* (MDRAB) and vancomycin-resistant *Enterococcus faecalis* (VRE)) inactivation in suspension. From our findings, it was indicated that the survival fraction of MDR bacteria decreased exponentially with increasing TiO_2 dose. MDR bacteria required TiO_2 doses of $1,004\sim 1,823$ and $1,829\sim 3,436$ ($\text{mg} \times \mu\text{W} \times \text{min}/\text{ml}\cdot\text{cm}^2$) for 90% and 99% inactivation, respectively. In addition, the TiO_2 dose for 99% inactivation was nearly 2 times higher than that for 90% inactivation. In comparison with other microbial species, we found the required TiO_2 dose for MRSA and MDRAB were significant lower than those used for *Escherichia coli* inactivation. The differences in bacterial cell membrane may result in the different microorganism susceptibility to TiO_2 . In summary, TiO_2 should be an effective method for reducing MDR bacteria number between 1-3 logs in suspension.

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Relationship between the Temperature of Work Environment and the Concentration of Uric Acid in Urine of the Workers within the Furnace Section of PT INCO, Tbk Soroako 2009

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Objective An extreme temperature can cause an inconvenience and also can change the balance in the concentration of body's electrolyte. One of the results is an increase in the concentration of uric acid in urine. The aim of this research is to determine the relationship between the temperature of work environment, duration