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Online Journal

Table of Contents

A Few Words from Editor

Dear SCCAEPA Online Journal Readers:

In this issue of the Southern California Chinese American Environmental Protection Association (SCCAEPA) Online Journal (ISSN 1944-8945), we published a total of 12 abstracts that were presented in our Symposium on Global Emerging Environmental Challenges and Government Responses held in August 2011 in San Gabriel. These abstracts address primarily two areas of air quality and hazardous material management. Hope we all enjoy the quality of the work presented in the abstracts. The abstracts dealing with water quality issues in the same conference will be published in our next issue of the Online Journal.

In addition, we created a column in this issue for readers who might be interested in language translation since this journal does accept both English and Chinese papers. From time to time, we all face the challenge how to translate the language which we think we understand well into the other language. In the column called "Lost in Translation", some original English or Chinese phrases are presented and then the respective translations are given out. Please join me to comment on those translations and write to us what you think the phrases should be translated for our leisure reading. You are also encouraged to contribute your own example of sentences.

To sustain the journal, we need members' contributions. I invite you to submit your work and written materials from your experience. To make things easier, I would like to suggest short articles that can be modified from your conference presentations and slides. The Journal is also open to outside of our association.

Enjoy!

Sincerely,

Yue Rong, Ph.D.
Editor-in-Chief
SCCAEPA Online Journal
February 2012
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Disclaimer

The company names and any trade names of a product mentioned in the articles of this journal do not reflect the endorsement of the Southern California Chinese American Environmental Protection Association (SCCAEPA).

Emission, fate and respiration exposure risk of polycyclic aromatic hydrocarbons in China

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Abstract

Emission of 16 Polycyclic Aromatic Hydrocarbons (PAHs) listed as USEPA priority pollutants from major sources in China were compiled. Geographical distribution and temporal change of the PAH emission, as well as emission profiles are discussed. It was estimated that the total quantity of 16 PAHs emitted from China was 116,000 tons in 2003, more than half of which was from biomass burning. Although vehicular emission contributed to a relatively small percentage of the total emission, it was one of the major sources in urban areas. The emission profile featured a relatively higher portion of high molecular weight (HMW) species with carcinogenic potential due to large contributions of domestic coal and coking industry. The emission increased continuously for four decades starting from 1950 but fluctuated since 1990 due to variation in the production of small-scale coke ovens.

A potential receptor influence function (PRIF) model, based on air mass forward trajectory calculations, was applied to simulate the atmospheric transport and outflow of PAHs emitted from China. With a ten day atmospheric transport time, most neighboring countries and regions, as well as remote regions, were influenced by PAH emissions from China. Of the total annual PAH emission of 116 Gg, 93% remained within the boundary of mainland China. Of the PAH outflow from China (8092 tons or 7.1% of the total annual PAH emission), approximately 69.9% (5655 tons) reached no further than the offshore environment of mainland China and the South China Sea. Interannual variation in the eastward PAH outflow was positively correlated to cold episodes of El Niño/Southern Oscillation. However, trans-Pacific atmospheric transport of PAHs from China was correlated to Pacific North America index (PNA) which is associated with the strength and position of westerly winds.

An Euler atmospheric transport model CanMETOP was modified and applied to model the atmospheric transport and multimedia fate of PAHs in China based on the emission inventory. The model results were validated by the field observations for concentration levels in atmosphere and soil. The results showed that the spatial distributions of PAHs levels in atmosphere are greatly controlled by emission and meteorological conditions. Elevated concentration levels in both atmosphere and soil were observed in Shanxi, Guizhou, North China Plain, and Sichuan Basin. Significant seasonal variation was found for the transport pattern of PAHs in China with greatly elevated transport flux in winter.

The model calculated ambient PAH concentrations were used to evaluate lung cancer risk for the Chinese population due to inhalation exposure to PAHs. The uncertainties of the

transport model, exposure and risk analysis were assessed using Monte Carlo simulation, taking into consideration the variation in PAH emission, aerosol and OH radical concentrations, dry deposition, respiration rate and genetic susceptibility. The average benzo[a]pyrene equivalent concentration (BaPeq) was 2.43 (1.29~4.50 as interquartile range, IR) ng/m3. The population-weighted BaPeq was 7.64 (IR, 4.05~14.1) ng/m3 because of the spatial overlap of the emissions and population density. It was estimated that 5.8% (IR, 2.0~11%) of China's land area, where 30% (IR, 17~43%) of the population lives, exceeded the national ambient BaPeq standard of 10 ng/m3. Taking into consideration the variation in exposure concentration, respiration rate and susceptibility, the overall population attributable fraction (PAF) for lung cancer due to inhalation exposure to PAHs was 1.6% (IR, 0.91~2.6%), corresponding to an excess annual lung cancer incidence rate of 0.65e10-5. While the spatial variability was high, the lung cancer risk in eastern China was higher than in western China and populations in major cities had a higher risk of lung cancer than rural areas.

中国工业源 VOCs 排放的源头追踪和行业特征研究

Studies on source tracing and characteristics of industrial VOCs emissions in China

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摘 要

挥发性有机化合物（VOCs）不仅会造成室内空气污染，而且在光照作用下会导致光化学烟雾、二次有机气溶胶和大气有机酸的浓度升高，影响人体健康和大气环境。准确描述 VOCs 排放源及排放特征对于研究大气环境系统和进行大气污染控制决策具有重要意义。本研究以我国工业源 VOCs 污染为研究对象，对我国工业源 VOCs 排放水平及排放特征、污染控制情景等问题展开研究。

根据工业 VOCs"源头追踪"的研究思路，建立了具有 4 级分类深度的工业排放源分类系统。对国家统计年鉴、行业协会统计数据、国内外研究结果等资料进行调研分析，确定污染排放研究的关键因子--活动水平数据和排放因子的具体数值，由此构建了我国工业源 VOCs 行业排放特征研究方法。

基于上述工作，对 2007-2009 年我国工业源 VOCs 排放量和行业排放特征进行分析研究。结果表明：2009 年我国工业源 VOCs 排放量约为 1206 万吨。其中，含 VOCs 产品的使用和排放是最重要的排放环节，排放量比重达 50.3%。共有石油炼制和石油化工、合成纤维生产、机械设备制造等 17 个排放源的年排放量达 20 万吨以上，其排放量之和占全国总排放量的 94.9%。2007-2009 年我国工业源 VOCs 排放量分别为 1023 万吨、1079 万吨和 1206 万吨，年均增长率为 8.6%。

对我国 2020 年工业源排放量的预测结果表明，基准情景下，我国工业 VOCs 排放量持续增长，至 2020 年将达到 1751 万吨；而在政策情景下，2020 年工业 VOCs 排放量仅比 2009 年增长了 15.6%，约 1394 万吨。相比情景Ⅰ，情景Ⅱ的减排率达 20.4%，这主要来自对重点污染源的污染控制措施。

关键词：VOCs；工业源；源头追踪；排放特征；情景分析

Abstract

Volatile Organic Compounds (VOCs) not only cause indoor air pollution, but also have an important influence on the formation of photochemical smog, secondary organic aerosols and organic acids in the air, which are severly harmful to human health and atmospheric environment. Therefore, research on the source and emission characteristics of VOCs has been an important issue in atmospheric chemistry studies, which provides scientific basis for the control of air pollution. For these reasons, this study conduted research on source strengths, charicteristcs and control policy of industrial VOCs.

The emsisson sources were classified into a total of four sources of production of VOCs, storage and transport, industrial processes using VOCs as raw materials, use of VOCs-containing products, according to the core concept of industrial VOCs source traceing. Activity data and emission factors were obtained from national statistical yearbooks, industrial association data and literature. Thus a set of methods were established to develop industrial VOCs inventory in China.

China's industrial VOCs emission were determined to be 12.06 Tg, with the source "use of VOCs-containing products" contributing 50.3%. Seventeen sources emitting over 200 kt yearly, such as Petroleum refining and petrochemicals, synthetic fibre production, machinery and equipment manufacturing, generating 94.9% of total emissions in 2009. Results show a continusous growth trend of industrial VOCs emissions during 2007-2009, with an annual average rate of 8.6% from 10.23Tg in 2007 to 12.06Tg in 2009.

Future emissions in 2020 were projected by control policy scenarios and from the emissions in 2009. In the 2020 baseline scenario, total industrial VOCs emission were projected to increased substantially 45% (17.51Tg) over 2009 level, while the 2020 policy scenario showed a modest increase (15.6%). Compared with baseline scenario, emission reduction by 20.4% in policy scenario was mainly due to pollution control measures.

Keywords: Volatile Organic Compounds (VOCs); industrial emissions; source-tracing; emission characteristics; scenario analysis

港區柴油卡車排放管制–以台北港為例

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瑩諮科技股份有限公司協理

國立臺灣大學化學系博士

摘要

台北港為臺灣地區最新建置完成的全新商港，從建港期間開始，大量穿梭的砂石車輛造成民怨，也引起台北縣環保局的重視，並開始因應台北港正式營運後可能面臨的重型卡車污染問題。因此自 2007 年起，環保局便開始加強對進出港區的卡車進行管制。一開始推動封港攔檢，在攔檢日攔截所有進港車輛進行排煙檢測及油品稽查；2008 年建立自主管理機制，2009 年配合該機制試辦以台北港空品特定區名義，要求所有進出柴油車輛需先完成排氣檢驗；2010 年建置車牌辨識系統，進出車輛由電腦自動辨識該車是否完成檢測，並且拍照檢查車斗覆蓋之防塵網是否卻時下拉 15 公分以確實防止揚塵。目前對於柴油車尾氣的粒狀物排放污染，以及散雜貨車逸散污染，皆得到良好的控制。

關鍵字：港區，柴油車，空氣污染，尾氣，逸散源

The Low Carbon Fuel Standard of California

Jing Yuan, Ph.D.

California Air resources Board

The California Low Carbon Fuel Standard (LCFS) will reduce greenhouse gas (GHG) emissions from the transportation sector in California by about 16 million metric tons (MMT) in 2020. These reductions account for almost 10 percent of the total GHG emission reductions needed to achieve the State's mandate of reducing GHG emissions to 1990 levels by 2020. In addition, the LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. My presentation will cover the following topics:

- Background of California LCFS

- Overview of the regulation

- How the program works

- Importance of lifecycle analysis

- Compliance and enforcement of LCFS

- The implementation updates

Estimating the Value of Urban Green Areas:

A Fixed Effects Model Applied to the Single Family Housing Market in Los Angeles, CA

Jean-Daniel M. SAPHORES and Wei LI

<u>Abstract</u>

We analyze 20,660 transactions of single family detached houses sold in 2003 and 2004 in the city of Los Angeles, CA, to estimate the value of urban trees, irrigated grass, and non-irrigated grass areas. We rely on a fine-grained fixed effect (FE) hedonic model with many covariates to control for unobserved neighborhood characteristics. A comparison between FE and ordinary least squares estimates suggests that the latter suffers from large biases. We find that Angelenos like lawns: 78 percent of the properties examined would gain value with additional irrigated grass in their neighborhood and even more (83 percent) on their parcel. Although more non-irrigated grass/bare soil on parcels typically hurts property values, it has the opposite effect at the neighborhood level. Moreover, additional parcel trees would decrease the value of almost half (46 percent) of the properties examined and they would have only a small positive impact on most of the others. By contrast, additional neighborhood trees would slightly increase the value of over 80 percent of the properties analyzed. This suggests that while Los Angeles residents may want additional trees, they are unwilling to pay for them. These results have important policy implications for urban tree planting programs that rely primarily on private property owners.

Keywords: urban forests; urban land use; hedonic pricing; fixed effects; GIS; single family housing

林下产业的发展与新经济增长点的培育

吴志文

（广元市林业和园林管理局 628000）

摘要：运用产业经济学原理，考察分析林下产业特殊的形成和发展规律。得出：林下产业是林下资源的转化，它是建立在林下多种生物链上的产业链群和新的生活方式，是在政策、市场、规模、价格、林地、生态、技术、资金、人力等多元约束条件下，实现生态效益亦产业效益的最大化。林下产业是林区新的经济增长点，为林业主导产业之一。林下产品具有碳汇价值，因为其特殊的使用价值--特殊的营养保健作用兼具生态、绿色、有机、特色而新奇，具有特殊的市场效用。建议，进一步开展林下产业形成、产业结构、产业关联、产业组织、产业区域配置、产业升级集成技术、投入产出及风险、林下产业与国际贸易、产业环境保护、政策与制度研究。并指出我国林下产业发展处于起步阶段，发挥宏观调控、市场调节双重作用，完善配套政策，推进技术创新和制度创新。成立全国性的林下产业协调领导小组，制定全国性的促进林下产业发展的专门政策、规划。应注意的几个问题：防止一哄而上，不讲质量。注重特色、绿色、概念经营，贯穿研发—设计—生产—营销；在采集、贮藏、加工、包装、销售过程中，逐步实现科学化、标准化，加快与国际贸易接轨，增强市场竞争力；融入森林文化元素，形成独特的品牌经营，做出符合时代市场需求的品质。

关键词：林下产业 新经济增长点 主导产业 新的生活方式 起步阶段 概念 特色 品牌

Development of Forest Undergrowth Industry and Cultivation of New Economic Growth Points

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Abstract: By applying the principles of industrial economy, it is pointed out, after the research on the history, status and trends of economic development practices of forest industries home and abroad, the forest undergrowth industry, in the national economy, based on the social work division principles, is a complex of similar enterprises and sectors working on production and operations of forest products to improve the conversion rate and commodity rate of forest resources. Therefore, it has special formation and development rules. It is derived from the above that: The forest

undergrowth industry is the conversion of forest resources, it is an industrial chain group established based on various types of biologic chains, with the aim at achieving the best ecological benefit, i.e. industrial benefits, under the multi-constraints of policy, market, scale, price, forest land, ecology, technology, fund, labor, etc. Forest undergrowth industry is a new economic growth point; Forest undergrowth industry a new low carbon economic growth point, which will lead to the future trends of the forest industry. Forest undergrowth industry has carbon sequestration value, the reason lies in that its special use value—special nutrition and health care function, and its novel in comprising ecological, green, organic and unique characteristics, so it has special market effect. It is recommended that, study of forest undergrowth industry in the aspects of industrial formation, industrial structure, industry association, industrial organization, industrial area configuration, industrial upgrading integration technology, input and output and risk, forest undergrowth industry and international trade, industrial environmental protection and policy and system shall be further developed. In addition, the paper also points out that the development of forest undergrowth industries in China is still under the elementary stage, dual effect of macro-control and market regulation shall be exerted, and the supporting policies shall be perfected, so as to boost technology innovation and institution innovation. The following points shall be noticed: Forest undergrowth industrial mode should focus on adaptability, adjusting measures to local conditions, applying proper technologies to guarantee it is economically feasible; rushing headlong into the mode and ignoring the quality shall be prevented; focusing on characterized, standardized and green high-new concept shall be adhered to for the operation, D&R, design, production and marketing shall be penetrated through; scientific and standardized management shall be gradually realized during the collection, storage, processing packaging and sales process, the pace jointing with the international trade shall be speeded up to strengthen the market competitiveness, making the forest cultural factors melting in, so as to form an unique brand operation, and produce the quality conforming to the market demands in different periods.

Keywords: Forest undergrowth industry, new economic growth points, leading industries, elementary stage, concept, characteristics and brand

Regional environmental risk zoning of area with chemistry industrial park based on k-means clustering

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Abstract In view of the problem that inherent characteristics in the subarea and the difference between subareas is not very clear in current environmental risk researches, through analyzing the constituent of environmental risk system and the occurrence mechanism of the environmental risk, the index system of the chemistry industrial park area and the method of index quantification was presented. With the 100m ×100m mesh grid basic zoning unit, Taking k-means clustering method to zone the environmental subarea of the area with Nanjing Chemistry Industrial Park and analyzing the clustering validity through Silhouette Coefficient, the area was zoned into 5 subareas. The common characteristics of regional environmental risk in the same subarea and the distinguishing from other subarea are obvious. The 5 subareas were named as Risk Source Aggregation subarea, Risk Field Powerful subarea, Risk Target Vulnerable subarea, Risk Target Protective subarea and Risk Field Attenuation subarea according to the character of the subareas, and the measures of the management and emergency of the subareas was also proposed.

Keywords: regional environmental risk; zoning method; k-means clustering; chemistry industrial park

Hazardous Waste Management and Treatment

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ABSTRACT

Under the authority of the Resource Conservation and Recovery (RCRA) of 1970 and regulations of the United States Environmental Protection Agency (USEPA) at 40 CFR (code of Federal Regulation) Parts 262-264, these parts have clearly defined the definition of hazardous waste and all hazardous wastes are tracked from the generator to their final disposal sites. The process is also called "Cradle to Grave" System. The most important tracking element of this system is the Uniform Hazardous Waste Manifest, which accompanies a hazardous waste shipment from its point of origin to its final destination. The Department of Transportation (DOT) is also consulted with issues concerning transportation of hazardous wastes and hazardous materials.

Hazardous Waste usually means Industrial Waste, Chemical Waste, Toxic Waste or Commercial Waste. USEPA by law is the agency that defines the Hazardous Waste. This includes listed waste, characteristic waste, mixed waste and derived waste. Due to the nature of waste most treatment facility prefer to use commercial waste treatment facility instead of others. Most people with "NIMBY"(Not In My Backyard) syndrome in mind that is the reason the company will select the proper name for the treatment facility. A complete industrial waste treatment facility will be used for this presentation include on-site laboratory, physical treatment, chemical treatment, bio-mediation, monitoring, incineration and hazardous waste landfill will be discussed in this presentation.

Conversion of Carbon Dioxide into Carbonates by Accelerated Carbonation of Industrial Solid Wastes Technology

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Accelerated carbonation of industrial solid waste such as steelmaking slag is one of the available and safe CCS (carbon capture and storage) technologies due to the permanent storage of CO2 in forms of carbonates. The carbonated steelmaking slag can be used for various applications, predominantly for concrete aggregate, green construction materials and road base. In this study, accelerated carbonation of steelmaking slags, i.e., basic oxygen furnace (BOF) slag, was performed in a rotating packed bed (RPB). The effects of reaction time, rotating speed, temperature, and slurry flow rate on the performance of the carbonation process were evaluated. The sequestration experiments were performed at a liquid-to-solid ratio of 20 mL/g with a flow rate of 2.5 L/min of a pure CO2 stream under atmospheric temperature and pressure. The carbonation products were analyzed quantitatively with thermogravimetric analysis (TGA) and atomic absorption spectrometer (AAS) and qualitatively with scanning electron microscope with energy dispersive X-ray spectroscope (SEM-EDX) and X-ray diffractometry (XRD). The results have revealed that a maximum conversion of BOF slag of 98.1% was achieved with a reaction time of 30 min and a rotating speed of 750 rpm at 65 ℃, 14.7 psig CO2 partial pressure and particle size = 63 µm. The major factors that affected the conversion were reaction time (1 min to 20 min), rotating speed (500 rpm to 1250 rpm), and temperature (25 oC to 65 oC). In addition, the kinetics of aqueous carbonation was evaluated based on the surface coverage model. Furthermore, the carbon footprint of the developed technology in this investigation was calculated by a life cycle assessment (LCA). Comparison of the results with other studies suggests that accelerated carbonation in a RPB is viable due to its higher conversion, shorter reaction time, and relatively milder condition.

Key words: industrial solid wastes, basic oxygen furnace slag, CO2 sequestration, kinetics, life cycle assessment

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An Innovative Technology for Landfill Mining

James C. Lu, Ph.D, PE

ABSTRACT

It was estimated by USEPA that over fifty thousand landfills are existed in the USA. Most of these landfills were once located in the suburban areas. But through expansion of the city, many of them are now within the city limit and some may even existed in heavy populated communities. Due to the leachate and landfill gas problems caused by the past improper disposal of solid wastes, major groundwater contamination, soil contamination, and toxic gas pollution occurred for almost every land disposal site throughout the country. Remediation of these landfills is usually hampered by high costs and lack of technology to treat the vast amount of wastes. Thermal treatment technology might be used for relative small toxic dumps. For most large landfills, if cleanup of the site are necessary, excavation, transportation and redeposition to other landfills were usually resulted.

Most of the landfills, especially used for disposal of municipal solid wastes (MSW) in the past, are actually containing valuable resources. "Landfill Mining" has been a dream for many environmental professionals in the past, due to no economically feasible and environmentally sound technology for the recovery of valuable waste components such as plastics, metals, glass, and meanwhile treating and recovering the major portion of organic components, which were mostly 70 to 80% in more recent MSW's. If an economically feasible and environmentally sound technology is available, it not only can gain profits and remediate environmental impacts, but also can restore the valuable land for future economic use.

This paper presents an innovative technology for the "Landfill Mining" of MSW sites. The processes involve two stages: excavation and separation/recovery of recyclables and high-rate conversion of remaining waste materials into very high quality organic fertilizers. The technology can achieve "zero-discharge" and virtually no secondary pollution problem. A very high potential of economic benefits can be achieved. The high quality organic fertilizer products can also be used to solve many of ecological crises such as desertification, areal pollution, stony desertification, and improvement of arable lands. In this paper detailed discussions on the principles, processes, chemical additives used, and equipment designs will be provided.

Taking Dominion over Global Emerging Environmental Challenges by Engineered Metal Oxide Nanoparticles

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With the rapid development of nanotechnology, increased production of engineered nanomaterials (ENM) is expected to increase human exposure to them and their environmental release. Due to their small size, large specific surface area, and reactive chemical properties, ENM may pose greater health risks compared with their larger counterparts. Engineered metal oxide nanoparticles have been used as the ingredients in various consumer products and remediation agents, including cosmetics and sunscreens, self-cleaning coatings and textiles, dental materials, environmental engineering/remediation, and solar batteries and automobile catalytic converters.

Considering the potential hazards affiliated with ENM exposure, it may appear to be a paradox in their intended application for protecting the human health. Consequently, it is vital to predict possible environmental impact of new nanomaterials before their mass production and application. In the present study, we adopted a systematic approach to investigate the correlation between selected physicochemical parameters and the in vitro cyto-toxicity of the test engineered metal oxide nanoparticles by using E. coli (ATCC#25254) and a human lymphocyte cell line. Based on experimental testing with E. coli, a nano quantitative structure-activity relationship (NanoQSAR) model describing cyto-toxicity of 17 nano-sized metal oxides to bacteria Escherichia coli ($R2=0.85$, $Q2CV=0.77$, $Q2EXT=0.83$, $RMSEC=0.20$, $RMSECV=0.24$, $RMSEp=0.19$) was developed.

In our cell line study, the dependence of cyto-toxicity on particle size and surface coating of iron oxide nanoparticles was investigated by using the A3 human T lymphocyte. Two different sizes (10 nm and 50 nm) and two different surface coatings (amine and carboxyl 25 groups) of iron oxide (IO) nanoparticles were tested with fluorescein diacetate (FDA) assay and WST-1 assay. In the 1-h FDA assay with PBS, IO nanoparticles did not show size-dependent toxicity to A3 cells in terms of mass concentration; however, in terms of the number of particles per well and the total surface area, they did exhibit size-dependent toxicity. Fifty nanometer IO nanoparticles are more toxic than the 10 nm counterparts. The results of both the 24-h FDA and WST-1 assays in a complete growth

medium indicate size- and surface coating-dependent toxicity to A3 cells in terms of mass concentration. IO nanoparticles of the smaller size are more toxic than those of the larger size. IO nanoparticles with the carboxyl group have a higher toxicity than those with the amine group. However, in the 24-h FDA assay, in terms of the number of particles per well and the resultant total surface area per well, the 50 nm IO nanoparticles are more toxic than those of size 10 nm. In terms of mass concentration, the number of particles per well and the total surface area, both the 24-h assays showed the consistent results that IO nanoparticles with the carboxyl group have a higher toxicity than those with the amine group. In summary, the aforementioned findings significantly advance our capability in predicting the cyto-toxicity of nano- metal oxide compounds. The adopted approach is expected to provide guidance for the future design of safe nanomaterials.

Key words: LC50, cyto-toxicity, A3 human T lymphocyte, E. coli

Significantly Increased Concerns with Mosquito Production in Modern Stormwater Infrastructure and Its Public Health Impact

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ABSTRACT

Federal, state, and local clean water regulations are forcing tremendous changes in the treatment and management of urban and stormwater runoff. Amendments to the federal Clean Water Act adopted in 1987 required states to develop and implement non-point source pollution management programs to abate pollutants potentially carried by these systems. A principal component of these programs is the implementation of Best Management Practices (BMPs), a term first adopted in the 1970s to represent actions, practices, or structures used to reduce the flow rates and/or constituent concentrations in runoff. Improving quality of water runoff through the use of BMPs, however, is technologically still in its infancy and is further complicated by stakeholder and activist groups with sometimes conflicting interests and priorities. Because of their placement within urban and suburban areas, structural BMPs may increase the number of mosquito breeding habitats in close proximity to humans. Since 1999, the California Department of Public Health, Vector-Borne Disease Section (VBDS) has led a series of collaborative projects of BMPs to identify conditions conducive to mosquito production, recommend non-chemical mitigation measures and, if applied, evaluate their success. The results of these efforts, fueled in part also by the recent arrival and rapid spread of West Nile virus, a newly recognized mosquito–borne human illness, have contributed greatly to how subsequent BMPs have been designed, implemented, and maintained. The advances made by vector control within the California water runoff management community with emphasis on current BMP designs as well as existing and future challenges will be discussed.

Lost in Translation

What do you think??

❖ "Monday Morning Quarterback"

Translation 1 (翻译 1): "事后诸葛亮"

Translation 2 (翻译 2): "马后炮"

Translation 3 (翻译 3): "   " (what is yours?)

❖ "Stay hungry, stay foolish." -- Steve Jobs (Apple computer founder)

Translation 1 (翻译 1): "做一个饿汉, 做一个傻瓜." (AM1300)

Translation 2 (翻译 2): "求知如饥，虚怀若愚" （中文报纸）

Translation 3 (翻译 3): "有渴望，寻异样"(a wise guy)

Translation 4 (翻译 4): "   " (what is yours?)

❖ "If you watch a game, it's fun. If you play it, it's recreation. If you work at it, it's golf." – Bob Hope (Comedian)

Translation 1 (翻译 1):

"事不关己的竞赛，是一种乐趣；

不计输赢的竞赛，是一种休闲；

势在必得的竞赛，是一种折磨。"（一位教授）

Translation 2 (翻译 2):

"看球观赛, 娱乐游戏;

随便玩玩, 休闲安逸;

尽善尽美, 高球真谛." (wise guy #1）

Translation 3 (翻译 3): "觀戰為趣, 參戰為閑, 贏戰則需勤" (wise guy #2)

Translation 4 (翻译 4):

看事不关己的比赛，是一种无穷趣乐；

打不计输赢的比赛，是一种休闲娱乐；

入尽力而抃的比赛，是一种尽善尽美。(wise guy #3)

Translation 5 (翻译 5): "   " (what is yours?)

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