Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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formaldehyde: 6.2, p = 0.015). By exclusion, OICD in ULCD was a probable diagnosis in 244/546 (44.7%) active workers vs 107/193 (55.4%) controls. Conclusion: The anticipated correlation between OACD and specific work contact allergens in ULCD-affected workers does preclude the need to consider OICD as a relevant occupational skin disease demanding equally assertive preventive measures.

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Study Of Contact Dermatitis In Workers Of A Cashew Nut Processing Plant In Bouake (Cote D'Ivoire) In 2020

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Introduction: Cashew nut processing exposes workers to many work contact allergens in ULCD-affected workers does preclude the need to consider OICD as a relevant occupational skin disease demanding equally assertive preventive measures. Results: During our study period, sixty-two cases of contact dermatitis were recorded out of 1523 consultations, i.e. a prevalence of 4%. These cases were generally observed in female workers (60%), with an average age of 27 years. Almost all of them were workers (89%). The main activity carried out by the workers suffering from contact dermatitis was the manual shell ing of cashew shells (71%). More than 2/3 of the patients (70.9%) had been at their workstation for less than one month. Clinically, all patients reported pruritus and tingling pain. Erythema was also noted in 61.3% of the workers. These lesions were located on the limbs (82.2%), particularly on the forearms (38.7%). The incriminating agent was the cashew nut shell liquid. It was responsible for eczema that occurred within 24 hours after contact. The duration of evolution of the lesions was a minimum of 4 days and a maximum of 30 days. This condition was responsible for 181 lost work days and none of these cases was reported as an occupational disease. Conclusion: Allergic contact dermatitis is probably an occupational disease that should be included in the list of IPM in Côte d'Ivoire. The possibility localization to the whole body raises the problem of protection of workers.

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Dermal exposure and surface contamination associated with the use of a cobalt-chrome alloy during metal additive manufacturing

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Introduction: Amidst the rapidly emerging Additive Manufacturing (AM) industry, not enough attention has been given to dermal exposure. To date only one AM study investigated dermal exposure to metals (nickel-chrome alloy). Our study aimed to: (i) characterise a cobalt-chrome (CoCr) AM feedstock powder in terms of particle size, shape, and elemental composition using the Morphology G3, X-ray fluorescence and inductively coupled plasma-optical emission spectrometry (ICP-OES) analyses, and (ii) assess dermal exposure and workplace surface contamination when the CoCr feedstock powder was used during AM.

Materials and methods: This study was approved by the North-West University Health Research Ethics Committee (NWU-00152-21-S1). A removal wipe sampling method was used. All AM operators participated (two in total), and metals were wiped from the index finger, palm, wrist, back of hand and neck, before and after each AM processing phase (for six process cycles). Workplace surfaces were wiped before and after each shift to quantify surface contamination. Wipe samples were analysed using ICP-mass spectrometry (ICP-MS).

Results: Co, Cr, molybdenum, iron, aluminium and nickel were present in the CoCr feedstock powder. These metals were also detected on dermal and workplace surface wipe samples. Preliminary results indicate exposure on all the anatomical areas, with the highest exposure on the index finger, and the highest exposure during the post-processing phases of AM.

Conclusion: Skin exposure to metals occur during metal AM and control measures need to be implemented in AM facilities to eliminate/reduce metal dermal exposure.

16. OCCUPATIONAL HEALTH AND COVID-19

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Disinfection of Respiratory Protective Equipment in OHSE - H2S Practical Trainings

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INTRODUCTION: The COVID-19 Pandemic has caused greatest impact to the business framework across the globe. Each company depends on their strategy, they developed their pandemic business continuity management. Like other industry, the OHSE Education and Training organizations have faced similar challenges especially to conduct trainings like Hydrogen Sulphide (H2S) rescue kits includes escape set, working set respiratory protective equipment. The different disinfectant chemicals have been identified and experimented on various feasibility factors like level of disinfection, procedures to be followed for disinfection, availability and the cost factor. In this process the material damage due to disinfectant chemicals over the equipment have been identified and the appropriate alternate chemicals by applying the Chemical Risk assessment & Substitution Hierarchy of control have been identified.

MATERIALS AND METHODS: The chlorine based and the ortho-Phthalaldehyde based COVID19 disinfection chemical compounds have been used for the different respirator protective equipment and escape sets. The disinfection chemicals have been applied over the RPEs for the following materials like Neoprene, Chloroprene, natural rubber, Polycarbonate, Flame retardant polyester and the impacts have been observed.

RESULTS AND DISCUSSIONS: The dilution factors, disinfection efficiency, Chemicals used can be identified from the manufacturer, federal and chemical agencies. This experiment result will help to...
identify the suitable COVID-19 disinfection chemicals for the different RPEs used in H2S/SO2 escape sets used in the Hydrocarbon industry.

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Changes in air quality inside vehicles and in working conditions of professional drivers during COVID-19 pandemic, in Paris area

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Introduction: During COVID-19 crisis, we evaluated the impact of the first lockdown restriction measures (March –May 2020) in Paris area on (1) the variation of in-vehicle ultrafine particle (UFP) and black carbon (BC) concentrations between pre- and post-lockdown period and (2) the professional drivers working conditions and practices.

Material and Methods: The study was conducted on 33 taxi drivers. UFP and BC were measured inside their vehicles with DiSCmini® and microAeth®, respectively, on two typical working days pre- and post-lockdown. The job-related characteristics were self-reported.

Results: Our results showed that post-lockdown, the number of clients significantly decreased as well as the taxi drivers journey duration. Taxi drivers significantly opened more their windows and reduced the use of air recirculation. UFP decreased significantly by 32% and BC by 31% post-lockdown, with a weaker positive correlation compared to pre-lockdown. The reduction of in-vehicle UFP was explained mainly by the reduction of traffic flow and ventilation settings, although the latter probably varied according to the traffic condition. No predictor explained the variation of in-vehicle BC concentration between pre- and post-lockdown, suggesting different sources of UFP and BC. The road traffic was not anymore the dominant source of BC post-lockdown.

Conclusion: We emphasize the role of traffic emissions on in-vehicle air pollution and that preventive measures such ventilation settings will help to better manage air quality inside vehicle in order to minimize exposure of professional drivers, as well as passengers, to air pollutants.

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A blueprint for well-designed, high-performing cloth masks that can outperform a 3-layered surgical mask

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Introduction: During COVID-19, due to the worldwide shortages of medical masks, homemade cloth masks became a mainstay of the pandemic. The CDC and WHO recommend the use of homemade cloth masks. However, there is insufficient evidence on the performance: respiratory droplet blocking ability, water-resistant capacity, breathability, and washability of commonly used fabrics to design high-performing cloth masks that can outperform medical masks.

Material and Methods: We conducted a series of experiments on aerosol blocking (using healthy volunteers sneeze, image-based flow measurement technique), water-resistant, breathability, and washability to evaluate all dimensions of protection of 17 different commonly available fabrics and their layered combinations.

Results: The research provides a blueprint for the optimal design of a high-performing cloth mask that can outperform a 3-layered surgical mask. A minimum of 3 layers is recommended to provide the performance of surgical masks. A combination of cotton/linen for the inner layer, blends for the middle—layer, and polyester/nylon for the outer—layer. The average thread count (threads contained in one square inch) should be greater than 200, and the porosity (percent of pores in a fabric) should be less than 2 %. Increasing the number of layers increases the droplet blocking efficiency by approximately 20 times per additional fabric layer. Machine washing at 60 °C did not affect the performance of cloth masks.

Conclusions: These results and visualizations can assist people in preparing effective homemade cloth masks during the ongoing COVID-19 pandemic and future epidemics.

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Using Health-Related Behaviour Change Program For Control Of Covid-19 At Workplaces: How It Works

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Introduction: The COVID-19 pandemic which is caused by severe acute respiratory syndrome — coronavirus 2 (SARS-CoV-2), has ravaged the world enormously, creating a huge pandemonium among public health, and occupational health and safety authorities. The virus is an enveloped RNA virus, transmitted directly or indirectly via airborne route or contact with contaminated fomites. Studies have shown that transmission occurs rapidly among humans because of poor health — related behaviour frequently exhibited. Although, necessary information on COVID-19 is accessible on all media platforms, the consistent poor response to safety guidelines by individuals at home, public settings and workplaces has aided the prolonged duration of the pandemic. In addition, it has been reported that individuals can be reorientated to behave appropriately via specialized and structured programs. Hence, I hereby propose the use of health — related behaviour change (HRBC) program for control of COVID-19 at workplaces.

Materials and Methods: The HRBC program for control of COVID-19 at workplaces requires strict adherence to the following measures: development, implementation, and enforcement of workplace policy for COVID-19; workshops; penalty and reward system; workers engagement via whistleblowing; use of educative videos in eating areas; COVID-19 safety tips in daily toolbox talks; and quarterly performance review.