



From the Guest Editor . . .

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journals, but I have never had the privilege of writing an editorial for an issue of any research journal.

The airborne transmission of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)¹ raised awareness about the importance of indoor air quality (IAQ) in homes, public spaces, and places of work. Indoor air quality refers to the quality of air in and around buildings and structures, considering the risk that it poses to the health and comfort of those occupying these buildings. Poor IAQ is associated with immediate health effects such as headaches, dizziness, fatigue, and irritation of the eyes, nose, throat, and lungs, and long-term health effects such as respiratory diseases, heart disease and cancer.² It also increases the risk of transmission and infection by airborne micro-organisms, such as SARS-CoV-2.¹

The Pandemic has also increased the use of hand sanitisers, bleach, quaternary ammonium products, and other indoor air cleaning devices. These air cleaners make use of ozonolysis, photolysis and ionisation, to name a few, to 'remove' indoor air contaminants, but they can also generate harmful secondary chemicals.³ This results in even more complex indoor chemistry in addition to chemicals already introduced by cleaning, cooking, indoor combustion sources, moisture, emissions from building materials, carpets, furniture, electronics, and consumer products.^{3,4}

Within occupational health and safety legislation, such as the South African Environmental Regulations for Workplaces (1987),⁵ IAQ is currently addressed through regulations on thermal requirements (extreme cold and heat) and ventilation (natural or mechanical), and carbon dioxide content in the place of work. Carbon dioxide, along with other hazardous chemical agents, is also included in the Regulations for Hazardous Chemical Agents (2021).⁶ The Environmental Regulations for Workplaces (1987) is currently under revision by the Department of Employment and Labour. Considering the ever-increasing complexity and dynamics of indoor air chemistry and IAQ, there is a need for regulations that consider this complexity to ensure adequate IAQ at places of work. This will, in future, facilitate improvement in IAQ health risk assessments, exposure monitoring, and control measures. As with SARS-CoV-2, ventilation (as an engineering control measure that removes or dilutes airborne contaminants) will be the most important control measure to ensure adequate IAQ.

In this issue of *Occupational Health Southern Africa*, we publish an original research paper and an opinion related to noise, and a review paper on hazardous biological agents. Rikhotso et al.

Research findings are communicated to the scientific community in journals, through original research articles, short communications, and review articles, to name a few. Most journals still have an editorial for each issue, usually written by the editor of the journal. As a researcher, 2022 marks 20 years since I co-authored my first research article. Since then, I have published many research articles, short communications, and review articles in national and international

analysed occupational health risk assessment reports, from 21 facilities of four companies in the manufacturing and utilities sector, to identify noise abatement measures and to rate the effectiveness thereof. Of concern is the limited use of engineering control measures to reduce noise exposure, and a reliance on administrative control measures and hearing protection devices, which were found not to be effective in reducing noise exposures. The opinion, written by Drs Thomson and Delva, is also related to noise, specifically medical surveillance of noise-induced hearing loss. They present the current approach to mitigating hearing loss by monitoring for changes in standard threshold shift and percentage loss in hearing. They state a case for an alternative approach, making use of algorithmic pattern recognition of audiograms.

The review article by Gomba et al. discusses microbiological water quality concerns in buildings during periods of no or low occupancy, as experienced during the COVID-19 pandemic. The authors conclude that reduced water usage in buildings, due to closures during the Pandemic, can result in a deterioration of water quality, and that this should form part of risk assessments with appropriate implementation of control measures to reduce contamination risks.

To conclude, August is Women's Month in South Africa. The Minerals Council South Africa celebrates this with an article about women in mining, and the progress (or lack thereof) that has been made with regard to increasing the proportion of women in the workforce, and addressing the challenges that they face, especially underground.

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REFERENCES

1. Lewis D. Why the WHO took two years to say COVID is airborne. *Nature*. 2022; 604(7904):26-31. doi: 10.1038/d41586-022-00925-7.
2. United States Environmental Protection Agency. Introduction to indoor air quality. Washington, D.C.: EPA; 2021. Available from: <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality> (accessed 20 Jul 2022).
3. Habre R, Dorman DC, Abbatt J, Bahnfleth WP, Carter E, Farmer D, et al. Why indoor air chemistry matters: a national academies consensus report. *Environ Sci Technol*. 2022; doi: org/10.1021/acs.est.2c04163.
4. Bekö G, Carslaw N, Fauser P, Kauneliene V, Nehr S, Phillips G, et al. The past, present, and future of indoor air chemistry. *Indoor Air*. 2020; 30:373-376. doi: 10.1111/ina.12634.
5. South Africa. 1987. Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983). Environmental regulations for workplaces (as amended). *Government Gazette No.10988*, 1987 October 16 (published under Government Notice 2281). Available from: <http://www.safetycon.co.za/documents/Environmental%20Regulations.pdf> (accessed 23 Jul 2022).
6. South Africa. 2021. Occupational Health and Safety Act, 1993 (Act No. 85 of 1993). Regulations for Hazardous Chemical Agents, 2021. *Government Gazette No. 44348* (published under Government Notice 280). Available from: https://www.gov.za/sites/default/files/gcis_document/202103/44348rg11263gon280.pdf (accessed 23 Jul 2022).