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## Our Featured Initiatives

### Indoor Air Quality



#### Styrene – A Common Air Pollutant

The common air pollutant, styrene, is also known as vinyl benzene. It is frequently emitted from consumer products manufactured with polystyrene plastics and is released from numerous building and construction materials. Elevated levels can be associated with cigarette smoke, the operation of laser printers and photocopiers, as well as the emissions from 3D printers using thermoplastic filaments, and the use of plastic reinforced bathroom fixtures such as sinks and bathtubs. For typical indoor air exposure, styrene is a mucous membrane irritant affecting the eyes and respiratory system. Read more in our latest technical brief, ["Styrene - A Common Air Pollutant."](#)



## CIRI Joins USGBC - Green Schools IAQ Technical Advisory Committee

Joining the U.S. Environmental Protection Agency (U.S. EPA), American Lung Association, ASHRAE, Perkins&Will and other key organizations, CIRI will be represented on its newly established Indoor Air Quality Technical Advisory Committee for the Center for Green Schools. Dr. Marilyn Black will work with other Committee members to develop best practices for achieving the highest quality indoor air for health across 100 different school districts, as well as support the K-12 staff in professional development and training. CIRI's research knowledge and application tool will be key contributions. Learn more about the [USGBC Center for Green Schools](#).



## VOC and Aldehyde Analysis Methods

Typical indoor air contains hundreds of individual volatile organic compounds (VOCs) with varying health consequences, including irritants, odorants, carcinogens, reproductive and neurodevelopmental toxins among others. To assess health hazards and prioritize mitigation strategies, it is important to identify what the specific VOCs are along with their exposure concentrations. CIRI is in a unique position to identify most all these VOCs based on our specialized indoor air database from years of experience in field and product emission studies. Our spectral database is built within our laboratory and with our analytical systems and specific analyte calibrations. Our scientists can identify VOCs and aldehydes accurately with little uncertainty down to a quantification level of approximately  $0.5 \mu\text{g}/\text{m}^3$ . This detailed level of detection is key to all our research to thoroughly examine what types of VOCs and/or aldehydes pollution is in the air people breathe everyday and how the mixture can impact human health. For more information read the technical brief, ["VOC and Aldehyde Analysis Methods Used in Research Studies."](#)

## Resiliency

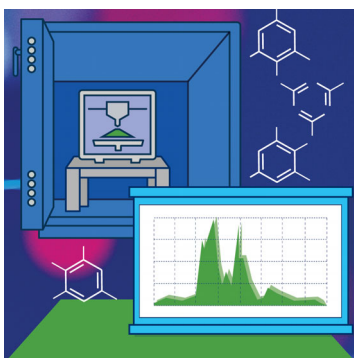


## CIRI, Baylor University, U.S. EPA, and NFPA Experts Share the Science of Resiliency and Wildfires to Architects

CIRI and expert panelists from Baylor University, the U.S. EPA, and the National Fire Protection Association (NFPA) delivered innovative information on resiliency and wildfires during the American Institute of Architects Conference on Architecture 2022's Virtual Education. This conference serves as the voice of the architectural profession and a resource for its members. The panel presentation provided novel information on the impacts of wildfires on human health and the built environment,

chemicals of concern associated with building material, and best practices and strategies for design and construction to provide a nexus of fire and chemical safety. Thank you to all panelists and attendees. Stay tuned for more research and presentations about resiliency in the built environment. For more information visit CIRI's newly launched [Wildfires and Human Health landing page](#).

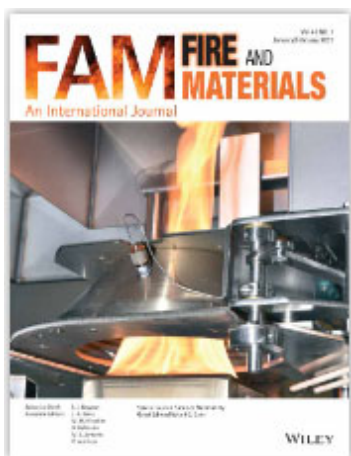
## 3D Printing



### CIRI Launches Taskforce for the Safe Use of 3D Printing in Higher Education

CIRI launched its 3D Printing Taskforce at the 69th-annual Campus Safety, Health, and Environmental Management Association (CSHEMA) conference in Scottsdale, Arizona July 8-13. CIRI has a formal partnership with CSHEMA, making the conference a perfect place to launch the taskforce. CIRI and CSHEMA are assembling a panel of university environmental health professionals to provide expertise and knowledge of university-based 3D printing applications and safety risks. This will lead to the development of best practices for protecting the safety and health of users and school air quality during printer use on campus. CIRI Research Manager, Dr. Cristi Bell-Huff, will lead CIRI's efforts.

## CIRI Happenings



### CIRI Paper Top Ten Most Downloaded

A CIRI paper published in the Fire and Materials Journal is one of the top 10 most downloaded articles for the publication. The article, "Chemical exposure and flammability risks of upholstered furniture," outlined methodologies for measuring human exposure to flame retardants and assessing flammability risks. It also compared the effectiveness of differing flammability reduction strategies on upholstered chairs for achieving both fire safe and chemical safe furniture. [Read the full paper](#).



## CIRI Releases Bi-Annual Bibliography

CIRI continues its tradition of transparency and easy access to critical information. The [updated bibliography](#) features 48 new citations from research into ongoing and emerging human safety risks. Check out the new citations that include scientific journal publications, conference proceedings, technical briefs, application notes, key articles, and e-learning modules and videos.



## Join Our Team

CIRI is recruiting key science talent to join our team! Our organization is dedicated to scientific discovery research, education, and communication of environmental exposures and steps for reducing human risks. We are seeking driven, results-oriented, and passionate people who want to contribute to safe working, living, and learning environments.

- [Director of Global Air Quality Research](#)
- [Senior Toxicologist](#)
- [Post-Doctoral Researcher](#)
- [Data Scientist](#)

## Recent Publications and Events



### Publications:

- Technical Brief, "[Styrene – A Common Air Pollutant](#)"
- Handout, "[3D Printers and Air Quality: Health Effects and Mitigation Strategies for Use of 3D Printers in Higher Education](#)"
- CSHEMA Annual Conference Presentation Summary, "[Investigating and Mitigating Health Impacts of 3D Printer Emissions](#)"

Visit us to hear about our research at conferences:

- [2022 AHFA Summit](#), August 17-18, 2022, "Balance Between Human Health and Fire Safety in the Built Environment"
- [Ron Blank GreenCE Academy](#) September 20, 2022, "Resiliency, Urban Wildfires and Materials"
- [2022 IFMA World Workplace](#), September 28-30, 2022, "Chemistry 101 for Building Managers"



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