



Indoor Air Pollution Kills and Science Needs to Step Up

室内空气污染危害严重，科学需要推动污染治理

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423 Words

The image of air pollution is often one of **chimney stacks** and **smoggy** cities. But this can be a misleading picture. Indoor air pollution killed more than 3 million people in 2020, almost as many as did its outdoor **counterpart**. And yet it has been mostly invisible to science, and to policy.

空气污染给人的印象往往是烟囱和烟雾弥漫的城市。但这可能是一幅使人产生误解的画面。2020 年，室内空气污染造成 300 多万人死亡，几乎与室外空气污染造成的死亡人数相同。然而，科学和政策在很大程度上忽视了室内空气污染。

In a Comment article in *Nature*, three researchers describe how that needs to change. Most people spend 80–90% of their time indoors, in homes, schools and places of work, the authors observe. But, in contrast to detailed and legally **enforceable** national standards for outdoor pollution that exist in many parts of the world, indoor spaces are mostly not **subject to** similar air-quality controls.

在《自然》杂志的一篇评论文章中，三位研究人员描述了这种情况需要如何改变。文章作者观察到，大多数人在室内（家里、学校和工作场所）度过 80% - 90% 的时间。但是，与世界上许多地方针对室外空气污染制定的详细的、具有法律约束力的国家标准不同，室内空间大多不受类似的空气质量管理的。

The authors are right to draw attention to something that has been neglected for too long. Progress is **hampered** by our ignorance of basic facts, such as what indoor air pollution actually consists of. It includes familiar **compounds** such as carbon **monoxide** and carbon dioxide from coal burning, and

chimney stack (屋顶上的) 烟囱
囱体

smoggy ['smɒgi] *adj.* 烟雾弥漫的

counterpart ['kaʊntərpɑ:rt] *n.* 职位（或作用）相当的人，对应的事物 | Belgian officials are discussing this with their French counterparts. 比利时官员与法国同级官员正在讨论此事。

enforceable [ɪn'fɔ:rsəbl] *adj.* 可执行的，可强制执行的 | The recommendations are not legally enforceable. 这些建议不能用法律手段强制执行。

subject to 受……支配的，服从于……；可能受……影响的，易遭受……的；取决于，视……而定 | All building firms are subject to tight controls. 所有建筑公司都受到严格管理。

hamper ['hæmpər] *v.* 妨碍，阻止，阻碍 | The bad weather hampered rescue operations. 恶劣的天气阻碍了救援工作的进行。

compound ['kɑ:mpaʊnd] *n.* 化合物，混合物 *adj.* 复合的 *v.* 使加重，使恶化；由……构成；混合 | Water is a compound of hydrogen and oxygen. 水是氢和氧的化合物。

nitrogen oxides from natural-gas boilers. But there is also a **multiplicity** of other sources, for example chemicals from **synthetic** compounds in paints and fabrics, **mould** from **damp** buildings and viruses and bacteria from human breath. Researchers need to be doing more to understand how all of these circulate, how they interact with each other, their impact on human health and how they will be affected by climate change.

作者将人们的注意力吸引到被忽视已久的事情上是正确的。我们对基本事实的无知阻碍了进步，比如室内空气污染实际上由什么组成。它包括我们熟悉的化合物，如燃煤产生的一氧化碳和二氧化碳，以及天然气锅炉产生的氮氧化物。但也有多种其他来源，例如油漆和织物所含的合成化合物中的化学物质，潮湿建筑物中的霉菌，以及人类呼吸带出的病毒和细菌。研究人员需要做更多的工作来了解所有这些物质是如何循环的，它们如何相互作用，它们对人类健康的影响，以及它们将如何受到气候变化的影响。

Although indoor air pollution is a global problem, the right strategies for combating it will **vary** between regions, countries and even localities. “Construction styles and materials, climate and energy sources, as well as behaviours and cultural practices, all affect indoor air”, the authors **point out**.

虽然室内空气污染是一个全球性问题，但不同地带、不同国家、甚至不同地区应对室内空气污染的正确策略都各不相同。作者指出：“建筑风格和材料、气候和能源，以及行为和文化习俗，都会影响室内空气。”

What's clear, however, is that, just as poorer and **marginalized** people are **disproportionately** affected by bad outdoor air quality, indoor air pollution is a source of inequality, too. In sub-Saharan Africa, for example, 700,000 people are estimated to have died from indoor air pollution in 2019, many of them from the effects of particles from indoor **biomass** stoves. Cleaner alternatives do exist, but their large-scale use needs a **panoply** of research-based interventions — from engineering and design to behavioural sciences.

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monoxide [məˈnɒksaɪd] *n.* 一氧化物

nitrogen [ˈnaɪtrədʒən] *n.* 氮，氮气

multiplicity [ˌmʌltɪˈplɪsəti] *n.* 多样性，多种多样 | The company offers a multiplicity of financial services. 公司提供各类金融服务。

synthetic [sɪnˈθetɪk] *adj.* 人造的，（人工）合成的

mould [moʊld] *n.* 霉，霉菌；模具；类型

damp [dæmp] *adj.* 潮湿的 *n.* 湿气 *v.* 使潮湿

vary [ˈvəri] *v.* 相异，不同；变化，改变 | The menu varies with the season. 菜单随季节而变动。

point out 指出，说出 | Some economists have pointed out that low inflation is not necessarily a good thing. 一些经济学家指出，低通货膨胀率不一定是好事。

marginalize [ˈmɑːrdʒɪnəlaɪz] *v.* 使边缘化，使显得不重要，排斥 | Female employees complained of being marginalized by management. 女性雇员抱怨被管理层边缘化。

disproportionately [ˌdɪsprəˈpɔːʃənətli] *adv.* 不成比例地 | The lower-paid spend a disproportionately large amount of their earnings on food. 低工资者将收入花在食物上的比例很大。

biomass [ˈbaɪomæs] *n.* 生物质（死去动植物的天然腐化物质，用于燃料或工业生产，尤其是发电）

然而，显而易见的是，正如贫困和边缘人群极大地受到恶劣室外空气质量的影响，室内空气污染也是不平等的来源。例如，在撒哈拉以南的非洲，估计有 70 万人在 2019 年死于室内空气污染，其中许多人死于室内生物质炉产生的颗粒。更清洁的替代品确实存在，但它们的大规模使用需要一整套基于研究的干预措施——从工程和设计到行为科学。

Indoor air pollution clearly needs to attract urgent attention from policymakers — the most recent guidelines from the World Health Organization on damp and mould were published in 2009. Indoor air pollution should become as mainstream a public-health concern as its outdoor sibling, with all the requisite funding that flows towards it. This is one good intention that shouldn't go up in a puff of smoke.

室内空气污染显然急需引起政策制定者的关注——世界卫生组织关于潮湿和霉菌的最新指导方针发布于 2009 年。室内空气污染应该像室外空气污染一样成为一个主流的公共卫生问题，所有必要的资金都应该投入室内空气污染。这是一个很好的意图，不应该如烟般消散。

panoply ['pænəpli] *n.* 巨大的数量；盛况，盛典

sibling ['sɪblɪŋ] *n.* 兄弟姐妹

requisite ['rekwɪzɪt] *adj.* 必需的，必备的，必不可少的 | She lacks the requisite experience for the job. 她缺少做这份工作所必需的经验。

go up 爆炸，被烧毁；被兴建，被建造；上升，上涨 | The whole building went up in flames. 整座楼房在大火中焚毁。

puff [pʌf] *n.* (烟、气等的) 一缕，少量 *v.* 吸，抽 (香烟、烟斗等)；使喷出，冒出 (烟或蒸汽) | Any chance of success seemed to vanish in a puff of smoke. 成功的机会犹如一缕青烟，瞬息即逝。

➤ 脉络梳理

- Para. 1 指出现状：室内空气污染危害巨大，但没有得到重视
- Para. 2 介绍相关的研究文章，指出室内空气污染缺少管理
- Para. 3 介绍室内空气污染的构成，并指出还有许多方面有待研究人员深入研究
- Para. 4-5 提出建议：针对不同地区的特点制定针对性的措施改善室内空气污染
- Para. 6 总结全文，指出室内空气污染急需相应政策和资金投入

➤ 长难句拆解

Indoor air pollution should become as mainstream a public-health concern as its outdoor sibling, with all the requisite funding that flows towards it.

as ... as 表达同级比较，第一个 as 为副词，后接形容词 (也可接副词)，第二个 as 为连词，引导比较状语从句。as 所比较的形容词 mainstream 之后直接跟名词，单数名词前的冠词应置于形容词与名词之间。