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# Science and Technique in the Service of More Modern and Salubrious Cities

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## ABSTRACT

In this paper we intend to analyse the problems created by industrial development and the concentration of the population in the main industrial cities. The pollution created by industrial establishments, as well as the insufficient supply of water in good conditions and the lack of sewage systems, created an unhealthy urban environment that favoured the emergence of diseases and did not correspond to the hygienist ideas of the time. Thus, the idea of progress and urban wellbeing was associated with the introduction of modern infrastructures that could solve these problems. On the other hand, the development of sciences such as chemistry or medicine allowed a better understanding of the reasons for the epidemics and to realize that there could only be good public health if the problems that affected individual health were solved.

In the process of urban modernization and the resolution of health problems affecting cities, doctors, chemists and engineers played a decisive role with their scientific knowledge and technical skills. Their action also benefited from their contacts abroad, and from the solutions to urban problems adopted in other countries. Political-administrative institutions also tried to take measures to eliminate or reduce the risk of disease or pollution, in order to create urban spaces in conformity with the standards of the more developed cities. The ideas for the modernization of cities were also linked to the introduction of gas and electricity in public lighting, as well as the ideas of better planning of urban spaces and the creation of more beautiful and pleasant cities, with more gardens and green areas. Similarly, the introduction of electrical transportation favoured the population's mobility in urban space, which gradually increased.

The introduction of basic sanitation and energy networks had an influence on living space, of course, although at first this alteration was particularly felt in the most important cities and the higher social strata. In this text we intend to analyse some of the issues mentioned, covering the late 19th century and the first decades of the 20th century.

## BIOGRAPHY

Ana Cardoso de Matos is Associate Professor at the Évora University—Department of History, Vice-director of the Institute for Advanced Studies and member of the board of Research Centre CIDEHUS/UE. She is responsible for the EMM TPTI—Techniques, patrimoines, territoires de l'industrie at Évora University. She is a member of: the advisory council of the Portuguese National Railway Museum Foundation, Comité d'Histoire de l'électricité et de l'énergie, Fondation EDF; International Railways History Association (IRHA); Associação Ibérica de História Ferroviária; the editorial board of the journals *HoST—Journal of History of Science and Technology*, *TST—Transportes, servicios y telecomunicaciones*; Comité scientifique of *Journal of Energy History/Revue d'Histoire de l'Énergie*. She was Visiting Professor at EHESS—Paris (2010 and 2012). She publishes regularly both in national and international journals and is author or co-author of 6 books, co-editor of 9 books and has collaborated in several books. Two of her last publications are "Technological Nocturne: The Lisbon Industrial Institute and Romantic Engineering (1849–1888)," *Technology and Culture*, 2017, vol. 58, 2 (with Tiago Saraiva) and "La Russie, l'Espagne, le Portugal et l'Empire ottoman. Deux siècles de politiques technoscientifiques à l'épreuve des approches comparatistes" (with Irina Gouzevitch and Darina Martikanova) in *Mina Kleiche-Dray (dir.) Les ancrages nationaux de la science mondiale XVIII<sup>e</sup>–XXI<sup>e</sup> siècles*, Paris, 2017.