The urban heat island (UHI) effect is a meteorological and climatological phenomenon in which urban areas experience significantly warmer temperatures than surrounding rural areas. The temperature difference is usually larger at night than during the day, and is most apparent when winds are weak, under block conditions, noticeably during the summer and winter. The main cause of the UHI effect is from the modification of land surfaces, while waste heat generated by energy usage is a secondary contributor. Urban areas occupy about 0.5% of the Earth's land surface but host more than half of the world's population. As a population center grows, it tends to expand its area and increase its average temperature. The term heat island is also used; the term can be used to refer to any area that is relatively hotter than the surrounding, but generally refers to human-disturbed areas.[1]

In the present book, nine typical literatures about urban heat island effect published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on urban heat island effect. We hope this book can demonstrate advances in urban heat island effect as well as give references to the researchers, students and other related people.

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[1] https://en.wikipedia.org/wiki/Urban_heat_island