기후변화대응 Photovoltaic/thermal cooling, heating, desalination 통합시스템의 강건한 다목적최적화 알고리즘 개발

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The fossil fuel consumption for cooling/heating and desalination applications is increasing continuously in the dry region due to fast development. Consumption can be reduced, and supplies made more reliable, by the complementation between fuel and solar energy that has great potential as a long-term, climate change adoption in multi-generation systems. In this study, a robust co-optimization using nondominated sorting genetic algorithm II is implemented to ensure the techno-economic and environmental benefits of a hybrid solar-assisted cooling-heating-desalination system. In compression of different system configurations, the photovoltaic/thermal system is more cost-effective while the photovoltaic system is more environmental.
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