



## 李旻

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## 个人简介



博士, 教授, 新能源系副主任。

研究生招生: 动力工程及工程热物理, 供热、供燃气、通风及空调工程 (2-3人/年)。

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## 讲授课程

本科生课程:

1. 《热泵技术》
2. 《MATLAB及工程应用》

博士生课程:

3. 《数学物理方法》(博士生课程)

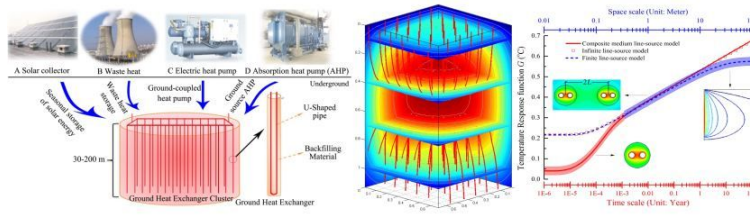
## 科研方向

主持科研项目:

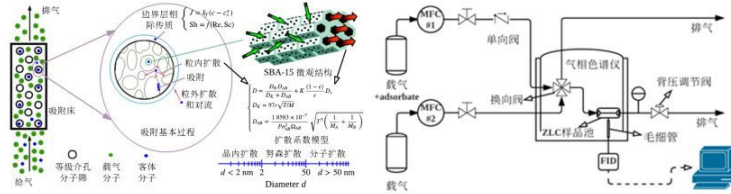
1. 国家自然科学基金面上项目 (51778626): 等级介孔分子筛分级互补吸附室内VOCs的机理研究
2. 中央高校基本科研业务费资助项目 (904040001): 含湿多孔岩土中地热换热器的热湿耦合传递建模
3. 湖南省自然科学基金面上项目: 等级介孔分子筛吸附室内VOCs的扩散限速机理研究
4. 可再生能源建筑利用教育部重点实验室开放研究基金 (KF201402): 地热换热器设计中的关键正反传热问题
5. 流程工业节能技术湖南省重点实验室开发研究基金: 改进传热模型的复合地源热泵系统设计原理与方法研究



图 14: 太阳能地源热泵系统的多种应用形式



方向2: 室内污染物的传递机理与综合调控



方向3: 基于模型的零能耗建筑优化设计

exchangers, Int J of Heat and Mass Transfer 55(9): 2615-2624.

<http://dx.doi.org/10.1016/j.ijheatmasstransfer.2011.12.033>

[7] Min Li, ACK Lai\*, (2013) Thermodynamic optimization of ground heat exchangers with single U-tube by entropy generation minimization method. Energy Conversion and Management 65: 133-139.

<http://dx.doi.org/10.1016/j.enconman.2012.07.013>

[8] Min Li\*, (2013) Robust non-fitting way to determine mass diffusivity and initial concentration for VOCs in building materials with accuracy estimation, Environmental Science & Technology 47 (16): 9086-9092. <http://dx.doi.org/10.1021/es401244g>

[9] Min Li\*, (2013) Diffusion-controlled emissions of volatile organic compounds (VOCs): Short-, mid-, and long-term emission profiles. Int J of Heat and Mass Transfer 62: 295-302.

<http://dx.doi.org/10.1016/j.ijheatmasstransfer.2013.02.079>

[10] WW Ma, Min Li\*, P Li, ACK Lai, (2015) New quasi-3D model for heat transfer in U-shaped GHEs (ground heat exchangers): Effective overall thermal resistance, Energy 90: 578-587.

<http://dx.doi.org/10.1016/j.energy.2015.07.098>

学术成果

近年来, 在Environmental Science & Technology、International Journal of Heat and Mass Transfer、Applied Energy和Energy等国际权威期刊发表一作和通讯作者SCI论文20余篇; SCI引用累计480余次; 4篇论文曾入选ESI工程学前1.0%高被引论文; 作为章节一作参编了地源热泵领域第一本英文综述性编著《Advances in Ground-Source Heat Pump Systems》(主编Simon J. Rees教授)。

代表论文:

[1] Min Li\*, ACK Lai, (2015) Review of analytical models for heat transfer by vertical ground heat exchangers (GHEs): A perspective of time and space scales, Applied Energy 151: 178-191.

<http://dx.doi.org/10.1016/j.apenergy.2015.04.070>

[2] Min Li\*, Ping Li, V Chan, et al., (2014) Full-scale temperature response function (G-function) for heat transfer by borehole ground heat exchangers (GHEs) from sub-hour to decades, Applied Energy 136: 197-205.

<http://dx.doi.org/10.1016/j.apenergy.2014.09.013>

[3] Min Li\*, ACK Lai, (2013) Analytical Model for short-time responses of ground heat exchangers with U-shaped tubes: model development and validation, Applied Energy 104: 510-516.

<http://dx.doi.org/10.1016/j.apenergy.2012.10.057>

[4] Min Li, ACK Lai\*, (2012) New temperature response functions (G functions) for pile and borehole ground heat exchangers based on composite-medium line-source theory, Energy 38: 255-263.

<http://dx.doi.org/10.1016/j.energy.2011.12.004>

[5] Min Li\*, BX Zhao, (2016) Analytical thermal efficiency of medium-low temperature organic Rankine cycles derived from entropy-generation analysis. Energy 106: 121-130.

<http://dx.doi.org/10.1016/j.energy.2016.03.054>

[6] Min Li, ACK Lai\*, (2012) Parameter estimation of in-situ thermal response tests for borehole ground heat