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Filmwise Condensation Heat Transfer Enhancement with Dropwise and Filmwise Coexisting Condensation Surfaces

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摘要 Six surfaces were prepared with different surface division patterns for the experimental investigation of steam condensation heat transfer characteristics for dropwise and filmwise coexisting (DFC) condensation surfaces under atmospheric pressure.

Dropwise condensation (DWC) was promoted with an ultrathin polytetrafluoroethylene (PTFE) film, which was prepared by the dynamic ion-beam mixed implantation (DIMI) method. The results showed that the condensation phenomena at the intersection between the dropwise and filmwise condensation regions were quite different for different relative positions of the dropwise and filmwise condensation regions. The experimental results revealed that the condensation heat transfer characteristics were highly influenced by the surface division number and the relative area ratio of the dropwise and filmwise condensation regions. The impact of these findings on heat transfer enhancement mechanism for condensation heat transfer is discussed in detail.

关键词 [dropwise and filmwise coexisting condensation](#) [heat transfer enhancement](#) [polymer film](#)

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Filmwise Condensation Heat Transfer Enhancement with Dropwise and Filmwise Coexisting Condensation Surfaces

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Key words [dropwise and filmwise coexisting condensation](#); [heat transfer enhancement](#); [polymer film](#)

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