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Optimizatiing Full-coverage Free Surface Flow for Liquid Metal PFCs

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After obtaining a full-coverage free curve-surface flow by curve plate with three layer meshes, new experimental results showed that a full-coverage free surface flow can't be obtained by a flat plate with meshes. More were recently investigated on MHD effects of other free surface flows flowing on flat plate. Base on the experimental data and newly developed modeling method, other way is found to get a full-coverage free surface flow with wavy plate theoretically and experimentally, or to block 'rivulet'flow formation by using new finding of the mechanism of secondary flow in free surface flow, or, to ensure the pressure is the same on surface of the free surface flow, the pressure profile in the cross section of the free surface flow will be reestablished once the flow becoming a free surface flow. How to change the pressure profile is dependent on inlet velocity profile and transverse magnetic field. The pressure changing in the cross section drives secondary flow to form 'rivulet'flow.

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