

## CONTENTS

D. A. NIELD and A. BARLETTA	577	Extended Oberbeck–Boussinesq approximation study of convective instabilities in a porous layer with horizontal flow and bottom heating
T. BELLO-OCHEDE, J. P. MEYER and J. DIRKER	586	Three-dimensional multi-scale plate assembly for maximum heat transfer rate density
M. LUCAS, P. J. MARTÍNEZ, J. RUIZ, A. S. KAISER and A. VIEDMA	594	On the influence of psychrometric ambient conditions on cooling tower drift deposition
F. ROGIERS and M. BAELEMAN	605	Towards maximal heat transfer rate densities for small-scale high effectiveness parallel-plate heat exchangers
H. SUN, G. LAURIAT, D. L. SUN and W. Q. TAO	615	Transient double-diffusive convection in an enclosure with large density variations
B. CELIK, M. RAISEE and A. BESKOK	626	Heat transfer enhancement in a slot channel via a transversely oscillating adiabatic circular cylinder
M. YU and J. LIN	635	Binary homogeneous nucleation and growth of water–sulfuric acid nanoparticles using a TEMOM model
D. L. SUN and W. Q. TAO	645	A coupled volume-of-fluid and level set (VOSET) method for computing incompressible two-phase flows
O. TOUAZI, E. CHÉNIER, F. DOUMENC and B. GUERRIER	656	Simulation of transient Rayleigh–Bénard–Marangoni convection induced by evaporation
F. X. TRIAS, A. GOROBETS, M. SORIA and A. OLIVA	665	Direct numerical simulation of a differentially heated cavity of aspect ratio 4 with Rayleigh numbers up to $10^{11}$ – Part I: Numerical methods and time-averaged flow
F. X. TRIAS, A. GOROBETS, M. SORIA and A. OLIVA	674	Direct numerical simulation of a differentially heated cavity of aspect ratio 4 with Rayleigh numbers up to $10^{11}$ – Part II: Heat transfer and flow dynamics
A. BEUF, J.-N. GENCE, P. CARRIÈRE and F. RAYNAL	684	Chaotic mixing efficiency in different geometries of Hele-Shaw cells
S. LIPS, F. LEFÈVRE and J. BONJOUR	694	Combined effects of the filling ratio and the vapour space thickness on the performance of a flat plate heat pipe
S. BASU, D. E. LAMBE and R. KUMAR	703	Water vapor and carbon dioxide species measurements in narrow channels
I. TURNER, P. ROUSSET, R. RÉMOND and P. PERRÉ	715	An experimental and theoretical investigation of the thermal treatment of wood ( <i>Fagus sylvatica</i> L.) in the range 200–260 °C
W. J. YOU, H. J. MOON, S. P. JANG, J. K. KIM and J. KOO	726	Effects of porosity, pumping power, and $L/D$ ratio on the thermal characteristics of an $N_2O$ catalytic igniter with packed bed geometry
J.-Y. JANG, C.-H. CHENG and Y.-X. HUANG	732	Optimal design of baffles locations with interdigitated flow channels of a centimeter-scale proton exchange membrane fuel cell

(Continued on page 812)

