95/05101 Electrohydrodynamic enhancement of heat transfer and fluid flow

Allen, P. H. and Karayiannis, T. G. *Heat Recovery Sys. CHP,* Jul. 1995, 15, (5), 389-343.

Provides an outline of the electrohydrodynamic enhancement mechanism. Presents a comprehensive review of past work on electrohydrodynamic single and two-phase heat transfer, as well as past work in the related area of electrohydrodynamic-induced flow.

95/05102 Enhancement to condensing heat transfer – New developments

Fujii, T. *J. of Enhanced Heat Transfer,* 1995, 2, (1), 127-137.

Most effective fin shapes for enhancing the heat transfer in in-tube, shell-and-tube and plate-fin condensers of refrigerants are discussed using dimensionless expressions for heat transfer coefficients. As for in-tube condensation, micro-fin tubes with trapezoid fins improve the heat transfer coefficient by twice or more as compared with smooth tubes. The enhancement factor of the local heat transfer coefficient and the penalty factor of the frictional resistance are also discussed.

95/05103 European gas appliance certification

Cavaciuti, L. *GAZ d'aujourd'hui,* Jun. 1995, 119, (6), 290-292. (In French)

For safety reasons, the majority of countries in the European Union only used to authorise the installation of gas equipment in residential and public buildings that conformed to national safety standards. If such standards did not exist, only appliances that were granted specific licences or authorisation were allowed to be installed. This situation prevented the free movement of goods, in order to remove the barrier, the European Commission took a new approach and decided to adopt such directives which would establish essential safety requirements for gas equipment.

95/05104 Experiment of combined injection of collected dust and coal powder into blast furnace at Xiangtan Iron and Steel Co.,

Fu, S. *et al., Gangtie,* 1994, 29, (8), 8-12. (In Chinese)

The combined injection into the blast-furnace tuyere is a reasonable technology for the treatment of the collected dust. The dust is disposed, melt desulphurization is enhanced, and Si content in pig iron product is decreased.

95/05105 Experimental study of particulate fouling in an industrial plate heat exchanger

Bossan, D. *et al., J. of Enhanced Heat Transfer,* 1995, 2, (1), 167-175.

An experimental study on particular fouling in an industrial plate heat exchanger has been carried out on a specially adapted test facility on a semi-industrial experimental platform at GRETh. The presented results show the evidence of an asymptotic fouling resistance behaviour. The particle size distribution measurements carried out during the tests have allowed to check the limit of a diffusion controlled particle deposition. A first attempt to account for the influence of the flow maldistribution between the heat exchangers channel has been proposed.

95/05106 Faber and Kell's heating and air conditioning of buildings

Martin, P. L. and Oughton, D. R. *(eds.), Butterworth-Heinemann, Linacre House, Jordan Hill, Oxford OX2 8DP, UK, 1995, 701 pp.*

The eighth revised edition of a practical and comprehensive book on heating and air conditioning design, forming a standard refeence book for both students and practitioners.

95/05107 Flow instability and augmented heat transfer of fin arrays

Xi, G. N. *et al., J. of Enhanced Heat Transfer,* 1995, 2, (1), 23-32.

A two-dimensional numerical computation was carried out for an in-line type of fin array for a periodically changing unsteady flow regime, or for the second laminar flow regime characterized by the self-sustained flow oscillation. Mechanisms of heat transfer augmentation due to the flow instability are discussed based on the obtained flow and thermal fields.

95/05108 Fuel alternatives for sintering at Belgo Mineira

De Lamas, V. P. *et al., Metal. Mater.,* 1994, 50, (434), 1024-1027. (In Portuguese)

The paper describes how charcoal fines, coke-breeze and anthracite were used as alternative fuel to coke in the Fe ore sintering plant at Belgo Mineira, Brazil. The experimental results show the possibility of using anthracite in replacing 30-50% coke.

95/05109 Fully developed flow and heat transfer in semi-elliptical ducts

Velusamy, K. *et al., Heat & Fluid Flow,* Apr. 1995, 16, (2), 145-152.

A control volume-based numerical solution is described for the fully developed laminar flow and heat transfer in ducts of semi-elliptical cross section. Both an isothermal and a uniform axial heat flux condition on the duct walls have been considered. Numerical results for velocity and temperature profiles, friction factor, pressure defect, and Nusselt number are presented for a wide range of duct aspect ratios from 0.1 to 0.999. Comparison with earlier numerical results for the limiting case of semicircular duct and with analytical solution for fully elliptical ducts is excellent. For ducts in which the baseplate is on the major axis, friction factor and Nusselt number for the uniform heat flux condition increase as the aspect ratio decreases, with values for the lowest aspect ratio of 0.1 being about 25% larger than those for a semicircular duct.

95/05110 Fundamental heat and mass transfer research in the development of new heat exchangers concepts

Afgan, N. H. *J. of Enhanced Heat Transfer,* 1995, 2, (1), 1-16.

The paper represents the authors view on the present development in research of heat and mass transfer related to the modern development of the heat exchangers. Special attention is devoted to the assessment of the potentiality of different mode of heat and mass transfer mechanism in relation to the new development of heat exchangers design.

95/05111 Gas installation pipework, boosters and compressors on industrial and commercial premises

IGE/UP/2, Communication 1598, Institution of Gas Engineers, 1994, 95 pp.

The documents cover similar subject matter to the former British Gas plc publications IM/16 and IM/15, but include much additional and enhanced information. The procedures apply to domestic premises involving pipework larger than 28 mm diameter.

95/05112 Guide values for evaluating fan noise

Engl, A. and Rupprecht, A. *Heiz. Luft. Haustech.,* Mar. 1995, 46, (3), 185-186. (In German)

95/05113 Heat transfer analysis of a single cylinder and a packed bed of carbonaceous material in a high-frequency induction furnace

Niu, M. *et al., Tetsu to Hagane,* 1995, 81, (2), 111-116. (In Japanese)

The paper presents experimental and theoretical studies on heat transfer in a high-frequency induction furnace for scrap melting.

95/05114 In search of reliability

Morgan, D. *Offshore Engineer,* Jul. 1995, 32-36.

Offshore operators lead the field in recognising the value of predictive maintenance and exploring new ways of maximising the return from assets, assuring plant integrity and extending viable working life. The authors reviews some of the latest developments.

95/05115 Incorporation of EHD enhancement in heat exchangers

Xu, Y. *et al., J. of Enhanced Heat Transfer,* 1995, 2, (1), 87-93.

The paper presents some new thinking about the possible effects of the electrode geometry on the electrohydrodynamic (EHD) enhancement of two phase heat transfer, especially boiling heat transfer. A hypothesis on the dependence of the enhancement effect on the geometry of the EHD electrode system in two phase heat transfer is made.

95/05116 Influence of low temperature carbonized coke on blast furnace operation

Kashiwaya, Y. *et al., Proc. Second Int. Symp. Metall. Processes Year 2000 Beyond TMS Extr. Process Metall. Meet., Miner. Met. Mater. Soc., Warrendale, PA, USA,* 1994, 1, 623-630.

For the clarification of the influence of low temperature carbonized coke (LTCC) on blast furnace operation, heating-up reduction experiments using a differential reaction bed of iron ore and coke was performed. From comparison of reaction rates (gasification and reduction) among different kinds of coke, it was elucidated that H_2 from volatile matter of LTCC had the largest effect on reduction reactions.

95/05117 Life cycle coating

Al-Hajj, A. and Thompson, N. *Offshore Engineer,* Jul. 1995, 30-31.

A review of current maintenance and refurbishment begins with a report on the introduction of life cycle costing techniques to the selection of maintenance coating systems for offshore fabric.

95/05118 Materials flow from bell-less top hoppers

Bochka, V. V. *et al., Stal',* 1994, (7), 11-14. (In Russian)

A physical model was used to simulate the flow characteristics of Fe ore sinter/pellet and coke mixtures as a function of the hopper operation parameters.