heat transfer society

WEBINAR FORUM **29th NOVEMBER 2024**

"How to achieve a 300% improvement in heat transfer and productivity in Chemical Batch Reactors"

Andrew C. Wills, PTSC.

Unlike many heat exchangers a chemical batch reactor is designed to enable heating, cooling and chilling in both closed and open process systems. The process side environment operates under pressure or vacuum and is generally both corrosive and toxic, in addition the possible process product material types involved are in the tens of thousands range.

The chemical batch reactor is designed to take basic chemical entities and synthesize them into more valuable chemical compounds, this is predominantly achieved through multiple exothermic or endothermic steps. The heat transfer system of a batch reactor has to manage the rate of reaction requirement, as well as material and volume changes. In addition, the reactor is required to achieve process temperatures across a wide operating range generally being between -29 to 200 DegC and through alternating heat flux demands.

The presentation aims to explain the importance and process limitations of current batch reactors in the production of specialty and fine chemicals and the developments that have taken place in the use of non-aqueous heat transfer fluids. The thermal fluids are used in combination with novel corrosion resistant heat transfer material composites enabling huge advancements in chemical

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Enquiries: David Norton, Tel: 01444 237575, Email: dnorton@bihl.com

batch reactor technology through substantive increases in heat transfer and productivity, when operating cyclic heating and cooling heat exchanging processes.

As a result of these technology design developments the overall energy inputs within the system has been significantly reduced through a combination of thermal inertia and process efficiency, which in an industry that is currently the worlds 3rd largest greenhouse gas emitter, is an important attribute.

The presentation will start at **12 noon** (for one hour).

Free Webinar Registration Link: HERE

Andrew C. Wills. BSc.

Andrew Wills Is the Managing Director and founder of Process Technology Strategic Consultancy Ltd (PTSC) and Thermal Fluid Systems Ltd. A mechanical engineer by profession having some 40+ years' senior level experience within the design and manufacture of Steam Power Generation and Chemical/ Pharma process equipment sectors.

PTSC was established in 2016 and has been at the forefront of the development of a "Next Gen" chemical batch reactor technology that significantly increases the Heat Flux of chemical batch reactors whilst dispensing with steam/water as its primary heat transfer media.

PTSC currently holds a number of global patents on this new technology.

Members are encouraged to share this notice with colleagues who may interest in this discussion.

Future events

- 28th March 2025, One Day Conference jointly held with the IChemE's Fluid Separations Special Interest Group – UCL, London.
- 28th March 2025, 59th HTS Annual Dinner - Grand Connaught Rooms, 61-65 Great Queen St, London WC2B 5DA.