**TNChE Asia 2024 Conference**

**" Decarbonization, AI and Digital Transformation for Sustainability in Process Industries "**

**Presenter's Biodata & Abstract**

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**Current Position** : Regional Technology Licensing Sales Manager

**Title of Presentation** : Decarbonization by Improving Fire Heater Efficiency to ⩾95%

**Presentation Abstract**:


Decarbonization by Improving Fire Heater Efficiency to ⩾95%

With increasing regional (and global) requirement of decarbonization, the refinery and petrochemical industry is in the frontline of being pressured to meet various decarbonization targets for the Scope 1. Among different efforts, it all boils down to either increasing the plant efficiency to reduce CO2 emissions, switching heating medium to H2 or other renewable sources, or carbon capture. The latter two involves drastic change and significantly large investment which almost impossible to have economical return. That leaves the first option – improving plant efficiency – to be the only possibility to drive to Scope 1 reduction while having positive project return of investment.

Sulzer's 95+ Heater Technology is an efficient and unique solution to improve the plant efficiency. It targets on the source of the CO2 – fire heaters in the refineries, to make significant impact on refinery and petrochemical plant's carbon footprint toward the ultimate goal of carbon neutral. To either new or existing fire heaters and furnaces, 95+ Heater Technology improves the heater efficiency to ≥95%, reducing significant CO2 emission by reducing fuel gas consumption that comes with attractive project return.

The 95+ Heater Technology has superior advantages of:

- Applicable to all types of fuel gas fire heaters to improve heating efficiency to ⩾95%.
- A "total solution"; not just an equipment solution like APH, and no expansive special-material APH is required

- Final fuel gas temperature can be as low as 80℃ or lower.
- Reduction of SOx and NOx.
- Worry-free operation – no corrosion, no fouling for the whole fire heater system.
- Almost no maintenance required.
- Significantly reduce the fuel gas consumption. Project return typically is <2 years with fuel gas saving.
- Significantly reduce the carbon emission. Project return typically is <1 year with fuel gas saving & carbon tax saving.
- Many commercial reference units.