

Tender Notification for the Procurement of a
“Printed Circuit Heat Exchanger”

(Revised & Last Date for Submission extended to: September 28th, 2017)

Kindly send your best quotation for a “Printed Circuit Heat Exchanger” with the technical specifications given below on C.I.P. Bangalore basis. Your quotation should clearly indicate the terms of delivery, delivery schedule, and payment terms. The tenderer should submit Technical and Financial Bid separately in sealed envelopes superscribing the envelope as ‘Technical Bid’ and ‘Financial Bid’. Both these envelopes should again be put in a single envelope superscribed ‘TENDER FOR: Printed Circuit Heat Exchanger’ and should reach the Chairman, Interdisciplinary Center for Energy Research (ICER), Attn: Prof. R.V. Ravikrishna, Indian Institute of Science, Bengaluru 560 012 before September 7th, 2017 by 4.30 pm.

A clear compliance statement giving brochures and other details as necessary to show compliance with technical specifications given below is required along with the technical bid.

Technical Specifications for the
“Printed Circuit Heat Exchanger”

Required specifications:

1.

PRINTED CIRCUIT MICROCHANNEL HEAT EXCHANGER REQUIREMENTS					
		HOT SIDE		COLD SIDE	
STREAM		Hot gases (mixture of N ₂ , O ₂ and CO ₂)		Supercritical CO ₂	
FLUID FLOW RATE (TOTAL)	kg/hr	403.2		658.8	
		INLET	OUTLET	INLET	OUTLET
TEMPERATURE	°C	770	TBD	300-370	500-560
DENSITY (VAP/FLUID)	kg/m ³	0.663	0.78	-	-
VISCOSITY (VAP/FLUID)	cP	0.04	0.035	-	-
MOLECULAR WEIGHT (VAP/FLUID)	kg/kmol	28	28	44	44
SPECIFIC HEAT (VAP/FLUID)	kJ/kg-K	1.15	1.088	-	-
THERMAL CONDUCTIVITY (VAP/FLUID)	W/m-K	0.068	0.053	-	-
PRESSURE (max/design)	bar	3/1.5		200/140	
PRESSURE DROP (max permissible)	bar	0.4		0.1	
HEAT EXCHANGED	kW	37			
Ambient Conditions		0.9 atm, 25°C			

2. The above requirements should be met by the PCHE not having dimensions more than 40 cm (length), 15 cm (width) and 15 cm (height).
3. All end connections should be demountable couplings/flanges. Appropriate mating flanges for the specified temperature and pressure along with gaskets (if any) should be included in the scope of supply. Kindly provide options for 1-inch, 2-inch and 3-inch nominal bore.
4. Instrument ports (0.5-inch ASME flanges) for measurement of temperature and pressure should be provided at all four end connections.

Terms & Conditions

1. One year of comprehensive warranty and support.
2. The system should be designed and proven to work with supercritical CO₂ fluid.
3. The vendors should show proven experience of designing PCHE using supercritical CO₂ for typical Brayton cycle power generation applications.
4. The vendor should provide a list of previous installations of such heat exchangers using supercritical CO₂ in India and worldwide. The testimonials from users at such installations may also be provided.
5. Test report (as per ASME standards) should be provided at the time of delivery.
6. The PCHE pattern should also be provided at the time of delivery.
7. The lead time for the delivery of the equipment should not be more than 10 weeks from the date of receipt of the purchase order.

All communications in this regard should be addressed to:

The Chairman
ICER,
Attn: Prof. R. V. Ravikrishna
Indian Institute of Science
Bangalore 560 012
India

E-mail communications should be sent to:

office@icer.iisc.ernet.in and kala@icer.iisc.ernet.in with a copy to:
ravikris@mecheng.iisc.ernet.in.
