



FLUIDIZATION SEMINAR AND WORKSHOP BENGALURU, INDIA SEPTEMBER 12TH – 15TH, 2023

TUESDAY, SEPTEMBER 12TH, 2023

8:00 AM	REGISTRATION
8:20 AM	INTRODUCTION TO PSRI AND ITS TECHNICAL PROGRAMS
8:30 AM	A. INTRODUCTION AND OVERVIEW <ol style="list-style-type: none">1. INTRODUCTION, TERMINOLOGY, AND PARTICULATE PROPERTIES2. FLUIDIZATION REGIMES AND TRANSITIONS
10:30 AM	BREAK
10:45 AM	3. HYDRODYNAMICS OF FLUIDIZED BEDS <ul style="list-style-type: none">▪ EFFECTS OF TEMPERATURE AND PRESSURE
12:00 PM	LUNCH (PROVIDED)
1:00 PM	4. GAS AND SOLIDS MIXING
2:45 PM	BREAK
3:00 PM	5. GAS SOLIDS CONTACTING, REACTION, MODELLING AND SCALE-UP 6. HEAT AND MASS TRANSFER
5:00 PM	ADJOURN

8:00 AM	B.	OVERVIEW OF INDUSTRIAL APPLICATIONS
9:00 AM	C.	GRIDS AND PARTICLE ATTRITION <ul style="list-style-type: none">▪ INTRODUCTION TO GRIDS (PRESSURE DROP ACROSS GRID)▪ DESIGN OF VARIOUS TYPES OF GRIDS<ul style="list-style-type: none">○ PERFORATED PLATE○ PIPE/SPARGER○ EFFECT OF SHROUDS▪ JET PENETRATION<ul style="list-style-type: none">○ EFFECTS OF TEMPERATURE AND PRESSURE
10:00 AM		BREAK
10:15 AM	C.	GRIDS AND PARTICLE ATTRITION (CONTINUED) <ul style="list-style-type: none">▪ SOURCES OF ATTRITION▪ PARTICLE ATTRITION AT SUBMERGED JETS<ul style="list-style-type: none">○ GRID DESIGN○ EFFECTS OF TEMPERATURE AND PRESSURE▪ PARTICLE ATTRITION IN CYCLONES
11:30 AM	D.	WORKSHOP ON GRID DESIGN
12:00 PM		LUNCH (PROVIDED)
1:00 PM	E.	PARTICLE ENTRAINMENT & ELUTRIATION <ul style="list-style-type: none">▪ INTRODUCTION▪ MECHANISMS OF EJECTION INTO FREEBOARD▪ SOLID FLUX PROFILE AND TDH▪ CORRELATION FOR BUBBLING & TURBULENT BEDS
3:00 PM		BREAK
3:15 PM	E.	PARTICLE ENTRAINMENT & ELUTRIATION (CONTINUED) <ul style="list-style-type: none">▪ ENTRAINMENT CORRELATION▪ EFFECTS OF GEOMETRY▪ ENTRAINMENT FROM RISERS▪ EFFECTS OF TEMPERATURE AND PRESSURE
4:15 PM	F.	WORKSHOP ON ENTRAINMENT <ul style="list-style-type: none">▪ FCC/POLYETHYLENE EXAMPLES
5:00 PM		ADJOURN

8:00 AM	G.	CYCLONE DESIGN <ul style="list-style-type: none">▪ PRINCIPLE OF OPERATION▪ DIPLEG PRESSURE BALANCE▪ FLAPPER & TRICKLE VALVES▪ DIFFERENT CYCLONE TYPES▪ EFFECT OF DIFFERENT CONFIGURATIONS▪ EFFECTS OF TEMPERATURE AND PRESSURE
10:00 AM	BREAK	
10:15 AM	G.	CYCLONE DESIGN (CONTINUED) <ul style="list-style-type: none">▪ DESIGN PROCEDURE▪ COLLECTION EFFICIENCY▪ CYCLONE DESIGN CALCULATION
11:15 AM	H.	WORKSHOP ON CYCLONES
12:00 PM	LUNCH (PROVIDED)	
1:00 PM	I.	STANDPIPES <ul style="list-style-type: none">▪ THEORY OF OPERATION▪ TYPES OF STANDPIPES▪ AERATION EFFECTS▪ STANDPIPE CAPACITY
3:00 PM	BREAK	
3:15 PM	I.	STANDPIPES (CONTINUED) <ul style="list-style-type: none">▪ ANGLED STANDPIPES▪ STRIPPING▪ NON-MECHANICAL VALVES▪ STANDPIPE CALCULATIONS
5:00 PM	ADJOURN	

8:00 AM	J.	DILUTE-PHASE PNEUMATIC CONVEYING <ul style="list-style-type: none">▪ VERTICAL & HORIZONTAL FLOW▪ PRESSURE DROP CALCULATIONS▪ CALCULATION OF CHOKING, SALTATION▪ BENDS▪ EFFECT OF DIAMETER▪ EFFECT OF PRESSURE▪ FEEDING CONSIDERATIONS
10:00 AM	BREAK	
10:15 PM	K.	DENSE-PHASE PNEUMATIC CONVEYING <ul style="list-style-type: none">▪ PACKED-BED FLOW▪ FLUIDIZED-BED FLOW▪ SLUG FLOW▪ SELECTION OF EQUIPMENT TYPE
11:30 AM	LUNCH (PROVIDED)	
12:30 PM	L.	PARTICLE ATTRITION <ul style="list-style-type: none">▪ TYPES OF ATTRITION▪ ATTRITION TESTING AND MODELING
1:30 PM	M.	MODELING GRANULAR-FLUID SYSTEMS <ul style="list-style-type: none">▪ TYPES OF MODELS▪ COMMON PITFALLS
2:45 PM	BREAK	
3:00 PM	M.	MODELING GRANULAR-FLUID SYSTEMS (CONTINUED)
5:00 PM		CONCLUSION OF SEMINAR