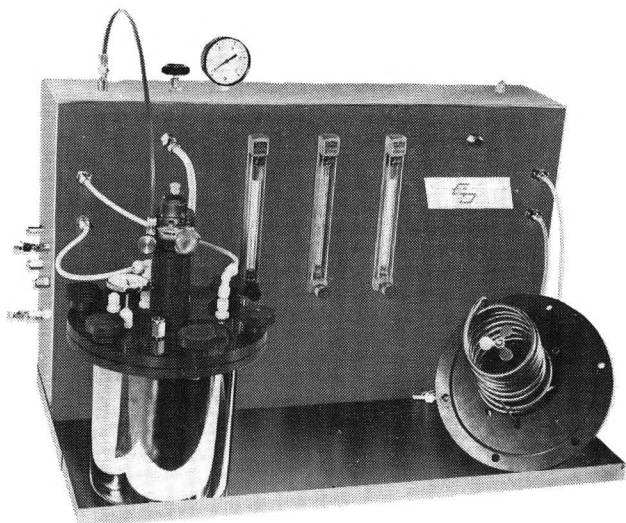


CHEMICAL REACTOR MULTIPURPOSE BENCH



The chemical reactor bench is a portable unit suitable for multiple use applications. The bench has been designed in such a way that it can be used in research and development activities as well as for instructional purposes.

Compact construction allows for ease in portability in the laboratory and for storage for applications not requiring continuous use. Reactor types included are 2 stainless steel externally mixed reactors (CSTR) with stainless steel coils and mixing propellers, and a glass, jacketed tubular reactor which may be operated either packed or open.

Reactor support equipment consists of two 5 gallon polyethylene reactant feed tanks for liquid reactants, an optional refrigerated-heated bath for temperature control, motor drives for the CSTR mixers, and three needle valve controlled rotameters. Meters may consist of any combination of ranges from .61 to 2078 cc/min for a liquid of unit specific gravity. The reactant tanks are air pressurized and the mixer motors are air driven eliminating the need for pumps and electrical power for the basic unit. The complete unit is housed in a stainless steel support bench. Dimensions of bench are 30" W x 18" H x 18" D.

Applications include batch and semibatch kinetics elucidation of homogeneous liquid phase reactions and gas-liquid or gas-liquid solid slurry reactions. The unit also may be used in the study of biochemical reactions and crystallization processes. As a teaching aid it can be used to illustrate transient and steady state continuous chemical reactor behavior (including steady state multiplicity) and for comparisons among reactor types. Stimulus-response techniques may be applied to the unit to illustrate mixing characteristics of various process equipment configurations.



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ChE letters

Survey Relates Quality Ratings to Teaching Load

Sir:

We have made a survey of the graduate education effort of the 58 departments of chemical engineering in the United States that were evaluated in the Roose-Anderson report on Graduate Education. Thirty replies were received and the Roose-Anderson rating of each department was used to divide the departments into groups of departments whose ratings are 17 and below (best), 18 to 38 (better), and 39 to 58 (good). Use of the Roose-Anderson rating was merely a convenient means of making the division into groups and is no indication of *our* judgment of the quality of the departments involved.

The summary table shows average values for the requested information within each rating group (good, better, or best) and an overall set of averages. The survey

Averages of Reported Values (Spring 1973)

Roose-Anderson Rating	39-58 (good)	17-38 (better)	1-16 (best)	Overall
Number Responding	9	11	10	31
Number of:				
Professors	5.3	8.4	7.5	7.0
Associate	2.5	4.0	2.5	3.0
Assistant	1.4	2.8	2.3	2.2
Average Class Load	6.3	5.9	4.7	5.6
Number of:				
Ph.D. Candidates	15.4	20.7	28.9	21.7
M.S. Candidates	15.2	26.2	20.5	20.6
Number of Degrees granted:				
Ph.D. (5 yrs)				
M.S. (5 yrs)	43.0	63.8	73.4	62.7
B.S. (5 yrs)	106.0	166.3	176.3	157.1
Fellowships:				
Fed., Number	1.3	2.2	5.2	3.2
\$	3,357	6,395	35,914	15,216
Ind., Number	2.9	5.7	5.2	4.6
\$	9,962	21,904	33,016	22,005
Other, Number	0.3	1.6	2.0	1.3
\$	986	7,650	8,412	5,714
Number of:				
Research Assts.	13.8	18.2	28.2	20
Teaching Assts.	4.0	6.2	7.7	7
Research Grants (1972-73 exp.):				
Fed., \$	70,898	248,233	231,357	187,485
Ind., \$	24,578	46,216	44,842	38,437
Other, \$	1,111	5,555	53,365	20,153
Papers Presented (5 yrs)	40	52	72	53
Journal Pub. (5 yrs)				
	86	86	188	120
Max. Allow. Stipends:				
Teaching Assts., \$	3,500	2,853	4,603	3,460
Research Assts., \$	3,525	3,066	3,977	3,521

(Continued on page 199)