

Modulbezeichnung	Mixing and Stirring
Semester (Häufigkeit)	WPM (nach Bedarf)
ECTS-Punkte (Dauer)	5 (1 Semester)
Art	Wahlpflichtmodul / Elective module
Sprache(n)	English
Studentische Arbeitsbelastung	60 h Kontaktzeit + 90 h Selbststudium
Voraussetzungen (laut BPO)	Keine, N/A
Empf. Voraussetzungen	Verfahrenstechnik / Process Engineering
Verwendbarkeit	BBT, BBTPV
Prüfungsart und -dauer	1,0 h oder mündliche Prüfung (Prüfungsleistung) und Versuchsberichte (15 - 20 Seiten) (Studienleistung) / 1.0 h written exam or oral exam (academic assessment) and test reports (15 - 20 pages) (academic performance)
Lehr- und Lernmethoden	Lecture with Internship
Modulverantwortliche(r)	R. Habermann
Qualifikationsziele After completing the module, students will be able to ... • understand the concept of mixing quality analysis and apply the rules of statistics for controlling the mixing quality • define and distinguish different mixing tasks • design a motor drive for an solid mixer or a stirrer • scale up mixing and stirring processes from the laboratory up to the industrial scale by ... • adapting statistic equations on mixing tasks • understanding the functional mechanisms of different mixing tasks • creating methods for measurement of required power for mixing tasks • knowledge about scale up rules and their determination in order to ... • utilize statistic equations to describe the mixing quality and state • design stirring/mixing processes and tailor-made products • layout motor drives for certain mixing tasks • conduct a valid scale up from the laboratory to the production scale	
Lehrinhalte Terms and definitions of mixing and stirring technology, consideration of selected mixing and stirring systems with regard to their function and application, operation and mixing tasks, procedure for scaling mixing and stirring devices. Practical experience in sampling, power measurement and scale-up respectively scale-down. The preferred language during the lecture is English.	

Literatur

Lecture manuscript and supplementary material

Technical literature

E. L. Paul, V. A. Atiemo-Obeng, S. M. Kresta: Handbook of Industrial Mixing: Science and Practice, John Wiley & Sons, Inc., Hoboken, New Jersey, 2004

M. Zlokarnik: Stirring: Theory and Practice, Wiley-VCH Verlag, Weinheim, 2001

Lehrveranstaltungen

Dozenten/-innen	Titel der Lehrveranstaltung	SWS
R. Habermann	Lecture Mixing and Stirring	2
R. Habermann	Internship Mixing and Stirring	2