

Industrial & Physical Pharmacy Seminar

IPPH 69600

Wednesday, November 30, 2022
3:30 PM in RHPH 164

“Punch Sticking - Mechanism, Kinetics, and Strategies to Overcome it”



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The development of a quality tablet product requires overcoming deficiencies in pharmaceutical properties of tablets to meet several performance standards. Punch sticking during tablet manufacturing is a longstanding common problem facing the pharmaceutical industry. However, this problem has only been empirically addressed with varying results because of its complexity, where several factors can affect the severity of punch sticking propensity. This talk will begin from a description of a model and kinetics of punch sticking. Then, formulation design and crystal and particle engineering strategies to effectively overcome this problem will be discussed with examples.

Biography: Dr. Sun is Professor of Pharmaceutics in the Department of Pharmaceutics, University of Minnesota, USA. Dr. Sun's research focuses on formulation development of tablet products through appropriate application of materials science and engineering principles. Two areas of current research are 1) crystal and particle engineering for superior pharmaceutical properties, e.g., powder flowability, tableability, dissolution, and stability; 2) fundamental understanding of pharmaceutical processes, e.g., milling, blending, granulation, and tableting. As of November 2022, he had published 230 peer-reviewed papers in these areas with more than 11,400 citations (*H*-index = 57).

Dr. Sun currently serves on the editorial advisory boards for *AAPS Open*, *CrystEngComm*, *Frontiers in Chemistry*, *Int. J. Pharm.*, *J. Pharm. Sci.*, *Mol. Pharmaceutics*, and *Pharm. Res.* He has served on the Expert Committee in Physical Analysis of the United States Pharmacopeia since 2010. Dr. Sun is an AAPS Fellow and a Fellow of Royal Society of Chemistry. He received the 2019 *Ralph Shangraw Memorial Award from the International Pharmaceutical Excipient Council (IPEC)* and the 2022 *David J. W. Grant NIPTE Distinguished Scholar Award in Basic Pharmaceutics*.