

عنوان مقاله:

Effect of wall emissivity on radiation distribution in photocatalytic reactors

محل انتشار:

هشتمین کنفرانس ملی کاربرد CFD در صنایع شیمیایی و نفت (سال: 1396)

تعداد صفحات اصل مقاله: 6

نویسندگان:

(Majede Nourizade - Chemical Engineering Department, Amirkabir University of Technology (Tehran Polytechnic

(Mohammad Rahmani - Chemical Engineering Department, Amirkabir University of Technology (Tehran Polytechnic

Aliyar Javadi - Institute of petroleum engineering, Tehran University

خلاصه مقاله:

In this study, a computational fluid dynamics (CFD) model for the simulation of radiation distribution inside a photoreactor was developed and evaluated experimentally. The evaluation showed that the proposed CFD model successfully predicted the local incident radiation within the reactor. Since the optical properties are wavelength dependent, the range of wavelength from the UV lamp was divided into 4 bands, and optical properties in each of the bands were determined by matching the experimental observations with simulated values. Simulations were then carried on different reactor wall reflectivity and reactor diameter. The performed analysis showed that reflectivity of the reactor wall in the photoreactors with low catalyst loading or small diameter, is an important factor which increases the radiation intensity and consequently the degradation rate

کلمات کلیدی:

photoreactor, computational, radiation distribution, radiation intensity

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/658637>

