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Westerterp K R, van Dierendonck L L & de Kraa J A. Interfacial areas in agitated gas-liquid contactors. *Chem. Eng. Sci.* **18**:157-76, 1963.
[Laboratorium voor Fysische Technologie, Technische Hogeschool, Delft, The Netherlands]

A chemical reaction is used to determine the specific interfacial areas in gas-liquid contactors. Two regions with and without agitation effect are distinguished and separated by a minimum agitation rate. The influence of vessel and agitator geometry on the minimum agitation rate and the specific interfacial area is correlated for different impeller types and for widely varying vessel and agitator sizes. [The *SCI*® indicates that this paper has been cited in over 110 publications since 1963.]

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"In 1952, I got my MSc degree in chemical engineering. I joined the Royal Dutch Shell group and worked as a technologist and plant manager in refineries mainly in South America. In 1958, I received an invitation from Kramers at Delft University to come to his institute for a period of four years to set up a school for chemical reaction engineering, to start the appropriate research, and to write a doctoral thesis. When I joined him I started to study and to write the notes for a lecture course. Later we became involved at the institute in many new research projects in reaction engineering, e.g., on heat effects and residence time distribution in chemical reactors. Another subject area was heterogeneous reactors; a literature study revealed a chaotic number of different correlations for interfacial areas, as measured by physical experimental methods. I started to do research in this field, supposing that chemical methods based on chemically enhanced absorption could do the job equally well, that the chaos in correlations was mainly due to differences in geometric factors, and that agitator power input was too rough a parameter for correlations. This proved to be true. In this research work I was assisted by the MSc students de Kraa and van Dierendonck. Our work attracted the attention of our colleagues, I think, because we were the first to apply chemical methods for interfacial area determinations and because we, as the first, proved many geometric factors played a role even at constant power inputs. Van Dierendonck joined the research and development laboratories of the DSM. There he continued in the same field, perfected our correlations even more, and tested them in many large industrial reactors. In 1969, he wrote his PhD thesis on interfacial areas.[1]

"In 1962, I left the institute and went back to industry. A year later Kramers did the same. As a farewell to university life we wrote a book together[2] accumulating all our experience with chemical reactors. Seventeen years later I joined a university again; now I am at the Twente University of Technology in charge of teaching process economics and chemical technology. My research again is on chemical reactors, whereas the subjects chosen are based on my previous industrial experience."

1. **van Dierendonck L L.** PhD thesis. Enschede, The Netherlands: Twente University of Technology, 1969.
2. **Kramers H & Westerterp K R.** *Elements of chemical reactor design and operation.* Amsterdam: The Netherlands University Press, 1963. 245 p.

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