

In memory of Frederick Wells Leavitt: a pioneer in adsorption technology (October 16, 1928–April 8, 2019)

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With sadness, we report the passing of Dr. Fred Leavitt on April 8, 2019 after a short illness. Fred was born in Elizabeth, New Jersey to parents George and Kathryn. One of five children, Fred suffered the loss of two of his siblings at early age (Kathryn died of typhoid fever at age 7 and Robert died during surgery to remove his tonsils at age 6). Fred was predeceased by his brother George and sister Margaret. Having never married, Fred had no living relatives at the time of his death.

Fred received his B.S. Ch. E. from Newark College of Engineering in 1950. After serving 2 years in the US Army and subsequent employment in the US Army Chemical Corps, he began his graduate study in Chemical Engineering at Rensselaer Polytechnic Institute (RPI) in 1954. Fred

received his M.S. Ch. E. in 1955 and his Ph.D. in 1957. Upon graduation, Fred joined the Molecular Sieve Group at Linde Air Products Co. (Division of Union Carbide Corporation, later becoming Praxair) and spent his entire career with the company until his retirement in 1996.

Fred's professional career began at a unique time in the advancement of adsorption technology—a time when synthetic molecular sieves were invented and applied to pressure swing adsorption (PSA) air separation and air purification. Fred was a key contributor in establishing the fundamental concepts that allowed the growth of these important technologies that remain essential to many industries today. His contributions to O₂ production by PSA through both advanced zeolites and process cycles are reflected in many of his 28 US patents. As an industrial scientist and engineer, much of Fred's pioneering work in adsorption remained unpublished. However, he was known publically for his work in column adsorption dynamics, steady state transfer zones, non-isothermal and adiabatic behavior in large adsorption beds and for the development of the loading ratio correlation (LRC) isotherm. Fred's capabilities extended well beyond adsorption and he was instrumental in solving many problems in the diverse technologies of Union Carbide. Fred received many corporate awards for his contributions including the prestigious Chairman's Award in 1992 for his role on the team that developed and commercialized VPSA O₂ technology.

Fred was a gentle, quiet man who willingly offered his wisdom and technical expertise to his colleagues. We are grateful for his mentorship and friendship and mourn the loss of an extraordinary engineer and scientist. We are thankful that Fred was able to enjoy the tribute to his career published in the Special Issue of Adsorption (January 2014). In addition to the many contributed articles in that issue, there is a more complete and detailed description of Fred's contributions to adsorption technology (Adsorption 20, 1–3 (2014)).

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