Rideal, Eric Keightley 1890 - 1974

DEGREE: PhD DATE: 1912 PLACE: Bonn

TEACHER/RESEARCH ADVISOR: Anschütz

studied the kinetics of capillary action; showed that the growth of microorganisms could be inhibited by attaching to them a lipid-soluble molecule with heavy sidechains; demonstrated that evaporation from a water surface could be retarded by as much as 50% by covering the surface with a monolayer of long-chain fatty acids; studied specific ion interactions with colloids; measured the rigidity of monomolecular layers - the beginning of quantitative surface rheology; investigated how surface potentials could be used to follow the kinetics of chemical reactions taking place on a surface film; one of the first to utilize deuterium in kinetic studies; discovered the Rideal mechanism for catalytic surface chemistry, in which a molecule in a second van der Waals layer reacts with a chemisorbed atom immediately beneath it; developed theory for titration of proteins that was useful for understanding the dyeing of fabrics; developed catalysts for the selective oxidation of CO to CO$_2$ without taking H$_2$ to H$_2$O.