

## Dr. J. Claine Petersen



Dr. J. Claine Petersen began his professional career in 1956 as a research chemist at American Gilsonite Company in Salt Lake City, Utah and conducted fundamental studies on the chemistry of this naturally occurring bituminous material. This was followed by employment in the New Products Division of the Textile Fibers Department at the Dupont Experimental Station in Wilmington, Delaware. While at Dupont, helped develop and hold the patent for the industrial non-woven fabric, Typar, which has had, among other applications, significant use as a construction and soil stabilization material for road building.

In 1964 took employment at the Petroleum Research Center, Bureau of Mines in Laramie Wyoming, which eventually became Western Research Institute after its defederalization in 1983. He was the manager and team leader of the asphalt research program at the Laramie research center for over twenty five years.

Petersen's areas of expertise include the application of infrared spectroscopic techniques to the functional group analysis of asphalt, mechanisms and kinetics of asphalt oxidative aging and the effects of oxidative aging on asphalt chemical and physical properties, asphalt component compatibility and durability, the physicochemical nature of molecular interactions in asphalt as they relate to chemical and physical properties, the chemistry of asphalt- aggregate interactions

and their effects on moisture damage in pavements, and asphalt modification including lime treatment of asphalt to reduce oxidative age hardening. He was selected as an expert consultant by the Transportation Research Board, National Research Council, National Academy of Sciences, together with Dr. Jon Epps, to develop the preliminary research study design for the \$50M asphalt materials segment of the national Strategic Highway Research Program (SHRP). Following this, participated as the asphalt chemistry expert on the team that developed the SHRP detailed work plan for this program. Was the principal investigator for the five year SHRP research project on asphalt binder characterization. This project was charged with the task of developing fundamental information on the chemistry and physical properties of asphalt and relationships of these properties with asphalt pavement performance, with the ultimate goal of developing new performance-related asphalt specifications.

At time of retirement, held the position of Distinguished Scientist at Western Research in Laramie, Wyoming. After retirement, was a technical consultant for the Washington, D.C. staff of the Strategic Highway Research Program. Currently retained as a consultant to the Western Research Institute/Federal Highway Administration research program on Fundamental Properties of Asphalts and Modified Asphalts. Also currently active as a technical consultant in the areas of asphalt chemistry and related technology.

Since 1965 have actively served on committees and task force groups of the Transportation Research Board (TRB). Chaired the TRB committee on Characteristics of Bituminous Materials for six years. Also an active member of the Association of Asphalt Paving Technologists. Organized in 1965 the Annual Asphalt Research Meeting sponsored by Western Research Institute which now enjoys international participation. This meeting was renamed the Petersen Asphalt Research Conference following Petersen's retirement. Frequently invited as a guest speaker at asphalt research seminars and conferences. Have served on numerous occasions as a technical consultant or advisor to government, university, and private organizations. Currently serve as a member of the Editorial Board of the International Journal of Road Materials and Pavement Design.

Dr. Petersen was an author or co-author of over seventy-five publications in technical journals; an author of numerous technical reports; a co-holder of patent for use of shale oil additives to improve moisture resistance of asphalt pavements; and a patent holder for Dupont's Typar, a spun-bonded non-woven polypropylene mat.

He was elected to Phi Beta Kappa, Phi Kappa Phi, and Sigma Xi scholastic honor societies; listed in *American Men of Science*, *Who's Who in the West*, and *Who's Who in Technology Today*; received Association of Asphalt Paving Technology Board of Directors Award in 1998; was awarded Emeritus Members Status of the committee on Characteristics of Bituminous Materials of the Transportation Research Board in 2002; and was elected to Honorary Membership status by the Association of Asphalt Paving Technologists in 2004.

**Elected: 2004**