Editorial

Progress in Glucose Sensing

As a common medical condition that produces excessive thirst, continuous urination and severe weight loss, Diabetes has interested medical researchers for over three millennia. Unfortunately it wasn't until the early 20th century that the prognosis for this condition became any better than it was 3000 years ago.

The term Diabetes was first used by Apollonius of Mephis around 230 BC, which in Greek means "To pass through" (*Dia* – through, *betes* – to go). Apollonius and his colleagues considered Diabetes as a disease of the Kidneys and subsequently recommended completely ineffective treatments, such as bloodletting or dehydration.

While the *Ebers Papyrus*, which was written around 1500 BC, excavated in 1862 AD from an ancient grave in Thebes, Egypt, described the first reference to what we now consider to be Diabetes Mellitus, it was physicians in India at around the same time that developed the first crude test for diabetes. They observed that the urine from people with diabetes attracted ants and flies. They subsequently named the condition "madhumeha" or "honey urine."

The important elements of our current understanding of diabetes can be traced to the early to mid 19th century. In 1815 Eugene Chevreul in Paris concluded that the sugar in urine was indeed Glucose, the first quantitative test for glucose in urine being developed by Von Fehling some years later in 1848.

Today, approximately 150 million people worldwide are affected by diabetes. With its prevalence still rising, diabetes still continues to fascinate, practitioners and researchers alike by its elusive cause and its many manifestations. Over the past 30 years, significant attention has been given to the development of physiological glucose monitoring technologies. This is because one important aspect for diabetes management, involves the tight control of blood glucose levels, so as to manage food intake and the dosage and the timing of insulin injection.

In this special issue of the *Journal of Fluorescence*, dedicated to the *Progress in Glucose Sensing*, we have assembled articles from leading workers in this important clinical sensing area, to provide a current opinion of glucose sensing and fluorescence-based monitoring technologies. In addition, the organization of the articles will hopefully give readers a chance to visualize the extent of research currently being undertaken in this field.

In conclusion we would like to thank authors for their invaluable and timely contributions, which serve again to demonstrate the applicability of fluorescence to clinical and biochemical sensing. Finally, in closing, we would like to thank Mary Rosenfeld (Assistant to the Editor-in-Chief) for helping us organize this notable special issue.

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