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Free enzyme bio-material as D-glucose sensor

Due to diabetes pandemic, a non-invasive technique of blood sugar monitoring is highly needed. Polymers comprising boronic acid (PolyBA) are known as D-glucose sensing materials. Boronic acids bind adjacent cis-diol in D-glucose forming cyclic boronic esters. In the present project, aromatic PolyBAs show a reversible and visible optical change in the presence of D-Glucose at physiological conditions. This optical change is enhanced by co-polymerizing 3-Acrylamidophenylboronic acid (3APB) derivatives and co-monomer called “spacer”. Hydrophilic/hydrophobic fine-tuning composition leads to highly effective sensor system.

Biography

Mouad Lamrani had been the Director and General Manager of Menicon Global R&D since 2005. While he was the first non-Japanese Researcher to enter Menicon Co. Ltd., Japan, he was responsible for establishing 3 branches of Menicon R&D in Strasbourg and Lyon, France as well as Singapore. He developed for Menicon Co. Ltd. Global Network of Research with outstanding researchers, universities and companies across Asia, Europe and USA. He is specialized in Materials Science, Electrochemistry and Biomaterials for health application. He obtained his PhD in 1993 at University of Blaise Pascal at Clermont-Ferrand. He obtained the EU award of “Human Capital Mobility” which led him to a 2-years Post-doctoral position in Instituto de Ciencia y Materiales Autonoma de Barcelona. He was appointed as an Assistant Researcher at Korean Institute of Science and Technology in Taejon for 18 months. Since 2000, he has been working with Menicon Co. Ltd., first and oldest Ophthalmology Japanese Company (60 Years). In 2002, he was awarded the President Prize of best scientific of the year in Menicon Co. Ltd. He published extensively in peer review journals and patented in the academy and Menicon. He managed Global R&D Innovation Centre in Japan, Singapore and Lyon, France. From 2010, he was Dean and General Manager at Institute of Sciences and Advanced Mechanics in Le Mans (ISMANS), situated in Le Mans, France.

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