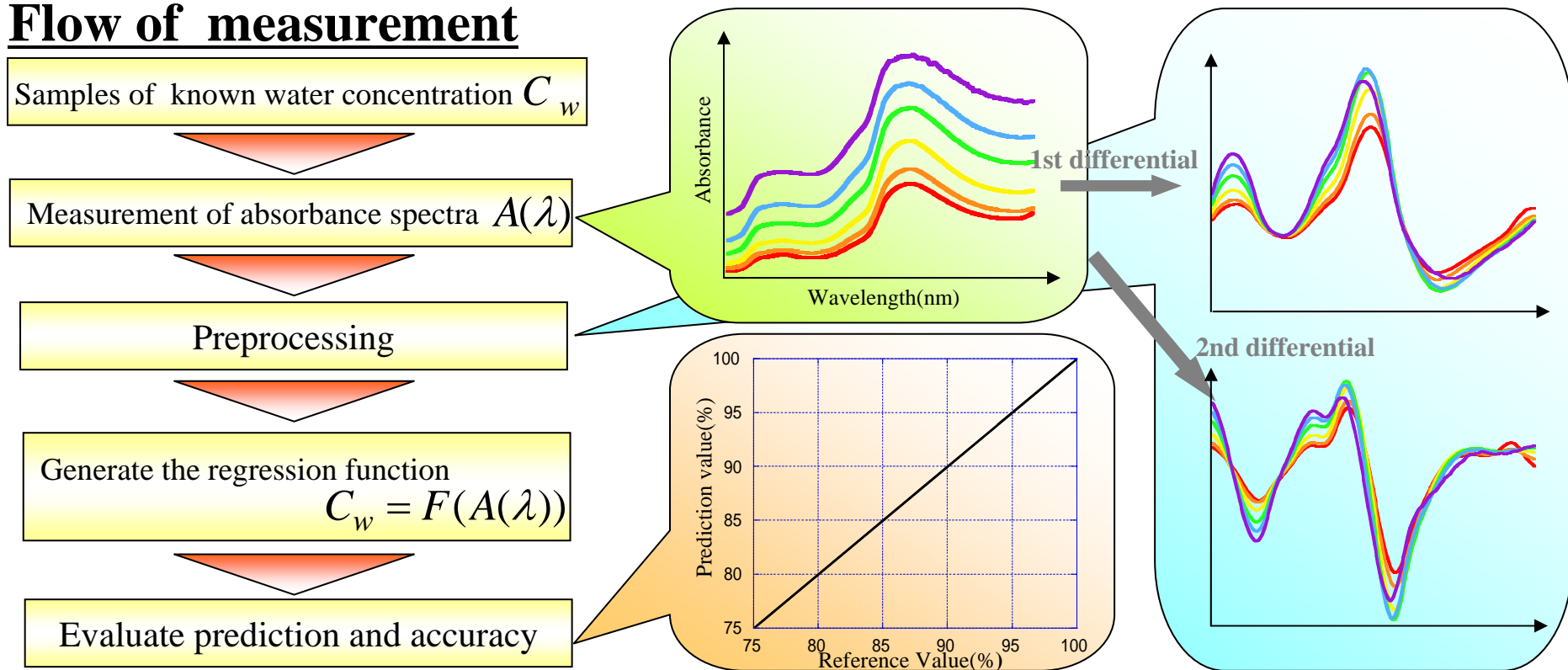


Optical Measurement of Water Content in blood

Patients of kidney disease need dialysis treatment for removing waste in blood. It is necessary to know in real-time the water content in blood to prevent the serious accidents by excess water removal associated with waste removal. We are developing a method to measure water content in blood by near infrared spectroscopy.

Flow of measurement



Water content is predicted as follows. Absorbance spectra of blood are measured by near infrared light in the wavelength range including water absorption band. They are preprocessed (differentiation etc.) in order to reduce the error by temperature and other factors. Then, the regression function is generated to relate the obtained spectra and water contents. It is possible to predict the water content by substituting the measured absorbance spectra of unknown samples to the obtained function. This optical method has advantages of being real-time, noninvasive and continuous.