WHAT IS CLAIMED IS:

1. A system for monitoring a water treatment process including a coagulation-settling process, comprising:

a first instrument positioned for online sampling of an inlet to the coagulation-settling process, the first instrument measuring a first fluorescence emission spectrum of an inlet sample in response to an excitation wavelength of 254 nm;

a second instrument positioned for online sampling of an outlet from the coagulation-settling process, the second instrument measuring a second fluorescence emission spectrum of an outlet sample in response to the excitation wavelength of 254 nm; and

a computer in communication with the first and second instruments and configured to compare the first fluorescence emission spectrum and the second fluorescence emission spectrum for controlling the coagulation-settling process.

2. A computer-implemented method for controlling a water treatment process, comprising:

measuring a first fluorescence emission spectrum of a pre-process water sample over a predetermined wavelength range produced in response to an excitation wavelength;

normalizing the first fluorescence emission spectrum to a predetermined peak value;

measuring a second fluorescence emission spectrum of a post-process water sample over the predetermined wavelength range produced in response to the excitation wavelength;

normalizing the second fluorescence emission spectrum to the predetermined peak value;

comparing the first and second peak normalized fluorescence emission spectra to determine a change in dissolved organic carbon (DOC); and

controlling the water treatment process based on the change in DOC.

3. The method of claim 2 wherein the excitation wavelength is about 254 nm.

4. The method of claim 3 wherein the predetermined wavelength range is from 290 nm to 600 nm.

5. The method of claim 2 wherein the water treatment process comprises a coagulation process.

6. The method of claim 2 wherein comparing comprises calculating a difference between the first and second peak normalized emission spectra.

7. The method of claim 2 further comprising:

integrating the first fluorescence emission spectrum over the predetermined wavelength range prior to normalizing the first fluorescence emission spectrum;

integrating the second fluorescence emission spectrum over the predetermined wavelength range prior to normalizing the second fluorescence emission spectrum; and

wherein comparing includes comparing the normalized integrals of the first and second fluorescence emission spectra.

8. The method of claim 7 wherein comparing includes determining a difference between the normalized integrals of the first and second fluorescence emission spectra.

9. The method of claim 7 wherein comparing includes determining a shift in wavelength of a peak value for the normalized integrals of the first and second fluorescence emission spectra.