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converting the dispersed electromagnetic radiation into an electrical signal representative of spectral data;  
an analog to digital converter for converting the electrical signal representative of spectral data into a digital electrical signal representative of the spectral data; and,  
a processor for receiving the digital signal, for significantly enhancing the resolution of the spectral data and

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for correcting some errors within the spectral data using stored data, the stored data relating a captured spectrum of a sample to a known spectrum of the sample, the known spectrum of the sample having higher resolution, wherein the low-resolution transducer has resolution  $R > 2$  nm.

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