



## Methods and Applications of Hyperspectral Imaging that Rapidly Identify and Differentiate Geological Minerals and Biominerals

Guest Editor:

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Deadline for manuscript  
submissions:

**closed (15 May 2019)**

### Message from the Guest Editor

Dear Colleagues,

Mineral identification and characterization work has benefited in recent years from advances in spectral and hyperspectral imaging methods that provide compositional information at high spatial resolution. Imaging methods based on Raman scattering, infrared and near infrared absorption and reflectance, and X-ray fluorescence have been used to study the mineral composition in both geological and biological samples. While these advances have been transformative, many challenges remain. For example, the complexity of spectral shape variation due to sample heterogeneity, nonuniform illumination, noise, and system-based artifacts make it difficult to quantitate sample composition. These same agents ultimately decrease the reliability of qualitative results. While many spectral imaging methods have the advantage of not requiring sample preparation, the development of training samples that adequately encompass the range of variation encountered in samples is exceedingly challenging.

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Guest Editor





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## Message from the Editor-in-Chief

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