

# Filip Košek

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## Personal Details:

Birth date: September 24th 1988

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## Education:

- 2014 – present**      Ph.D., Geology  
Faculty of Science, Charles University, Czech Republic  
Thesis title: Application of Raman spectroscopy for detection of sulfates of self-ignited coal heaps  
Supervisor: Prof. RNDr. Jan Jehlička, Dr.
- 2012 – 2014**      Mgr., Geology (Environmental Geochemistry)  
Charles University, Faculty of Science, Czech Republic
- 2009 – 2012**      Bc., Geology  
Charles University, Faculty of Science, Czech Republic

## Awards and Honors

- 2014 - Award from the Dean for the best M.Sc. thesis (Geology)

## Scientific Interests:

- Raman spectroscopic studies of secondary minerals
- Application of portable Raman instrumentation for geosciences
- High-temperature mineralogy of fumaroles and application for exobiology
- Study of mineral alterations in acidic and low/high temperature environment

## Research Experience:

- 2015 – 2017**      Principal Investigator of “Mineralogy of extreme environments on burning coal dumps: field identification of minerals and organic compounds using miniaturized Raman spectrometers”, research grant of Grant Agency of Charles University (GAUK).
- 2013 - 2014**      Principal Investigator of “Detection of sulfates in situ using miniaturized Raman spectrometers: testing for potential exobiology applications”, Research grant of Grant Agency of Charles University (GAUK).

### Conference Contributions:

- Košek et al., (2018), Mineralogy of self-ignited coal waste heaps: a preferential field for Raman spectroscopy? Presented at the 13<sup>th</sup> GeoRaman conference in Catania, Sicily, Italy.
- Košek et al., (2017), Tracking of hydration states of sulfates by laboratory and in situ Raman spectroscopy. Presented at the Goldschmidt conference in Paris, France.
- Košek et al. (2016). Field identification of minerals at burning coal heaps using miniature Raman spectrometers. Presented at the 12<sup>th</sup> GeoRaman conference in Novosibirsk, Russia.
- Košek et al. (2015). Application of portable Raman spectroscopy in exobiology: In situ identification of sulfate minerals. Presented at the Goldschmidt conference in Prague, Czech Republic.
- Košek et al. (2014) Using handheld Raman spectrometers for discrimination of secondary sulfate minerals at outcrops: potential and limitations. Presented at the 11<sup>th</sup> GeoRaman conference in St. Louis, MO, USA.

### Publications:

- **Košek F.**, Culka A., Jehlička J. (2018): Raman spectroscopic study of six synthetic anhydrous sulfates relevant to the mineralogy of fumaroles. *Journal of Raman Spectroscopy*, DOI: 10.1002/jrs.5363
- **Košek F.**, Culka A., Žáček V., Laufek F., Škoda R., Jehlička J. (2018): Native alunogen: a Raman spectroscopic study of a well-described specimen. *Journal of Molecular Structure* 1157, 191-200.
- Barcytė D., Nedbalová L., Culka A., **Košek F.**, Jehlička J. (2018): Burning coal spoil heaps as a new habitat for the extremophilic red alga *Galdieria sulphuraria*, *Fottea*, 18, 19-29.
- **Košek F.**, Culka A., Jehlička J. (2017): Field identification of minerals at burning coal dumps using miniature Raman spectrometers, *Journal of Raman Spectroscopy*, 48, 1494-1502.
- Jehlička J., Culka A., **Košek F.** (2017): Obtaining Raman spectra of minerals and carbonaceous matter using a portable sequentially shifted excitation Raman spectrometer – a few examples, *Journal of Raman Spectroscopy*, 48, 1583-1589. • **Košek F.**, Culka A., Drahotka P., Jehlička J. (2017): Applying portable Raman spectrometers for field discrimination of sulfates: Training for successful extraterrestrial detection, *Journal of Raman Spectroscopy*, 48, 1085-1093.
- Culka A., **Košek F.**, Drahotka P., Jehlička J. Use of miniaturized Raman spectrometer for detection of sulfates of different hydration states—Significance for Mars studies, *Icarus*, 243, 440-453.