

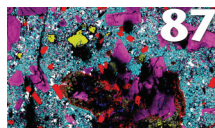
# Elements

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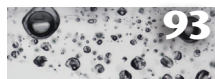
## Raman Spectroscopy in Earth and Planetary Sciences

Guest Editors: Jill D. Pasteris and Olivier Beyssac



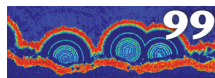
### Welcome to Raman Spectroscopy: Successes, Challenges, and Pitfalls

Jill D. Pasteris and Olivier Beyssac



### Microscale Chemistry: Raman Analysis of Fluid and Melt Inclusions

Robert J. Bodnar and Maria Luce Frezzotti



### Applications of Raman Spectroscopy in Mineralogy and Geochemistry

Lutz Nasdala and Christian Schmidt



### Applications of Raman Spectroscopy in Metamorphic Petrology and Tectonics

Andrey V. Korsakov, Matthew J. Kohn, and Maria Perraki



### Geoscience Meets Biology: Raman Spectroscopy in Geobiology and Biomineralization

Andrew Steele, Marc D. Fries, and Jill D. Pasteris



### New Trends in Raman Spectroscopy: From High-Resolution Geochemistry to Planetary Exploration

Olivier Beyssac

A 4 mm emerald crystal from the El Amarillal Mine (Muzo, Boyacá Department, Colombia) illuminated by a 473 nm laser beam. The red, divergent "thread" is due to laser-induced luminescence of  $\text{Cr}^{3+}$  in the sample. (BOTTOM) Raman spectra from the emerald obtained in 3 directions. SAMPLE COURTESY OF DARWIN FORTALECHÉ, PHOTOGRAPH BY THOMAS EXEL, SPECTRA BY LUTZ NASDALA.

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## DEPARTMENTS

<b>Editorial</b> – Our Academic Family	79
<b>From the Editors</b>	80
<b>Calendar</b>	81
<b>Perspective</b> – Perspectives on the History of the Raman Effect and its Implementation	82
<b>Meet the Authors</b>	84
<b>People in the News</b>	86
<b>Society News</b>	
Clay Minerals Society	123
Italian Society of Mineralogy and Petrology	124
Mineralogical Society of Great Britain and Ireland	126
Mineralogical Society of America	128
Japan Association of Mineralogical Sciences	130
Deutsche Mineralogische Gesellschaft	131
Geochemical Society	132
Association of Applied Geochemists	134
Sociedad Española de Mineralogía	135
European Association of Geochemistry	136
Mineralogical Association of Canada	138
Meteoritical Society	140
Société Française de Minéralogie et de Cristallographie	142
International Association of GeoChemistry	142
Mineralogical Society of Poland	143
<b>IMA Sponsored News</b> – Bulgarian Mineralogical Society	144
<b>Book Reviews</b>	
Mont Saint-Hilaire: History, Geology, Mineralogy	145
Handbook of Luminescence Dating	146
<b>Parting Shots</b> – How Far to Glencoe?	147
<b>Advertisers in this Issue</b>	148