

Material Study of the Dead Sea Scrolls

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Dead Sea Scrolls project

Developing a methodology for the study of the DSS
ancient parchment manuscripts and inks

Dead Sea Scrolls specific questions:

From fragments → sheet → scroll

Different caves: different origin?

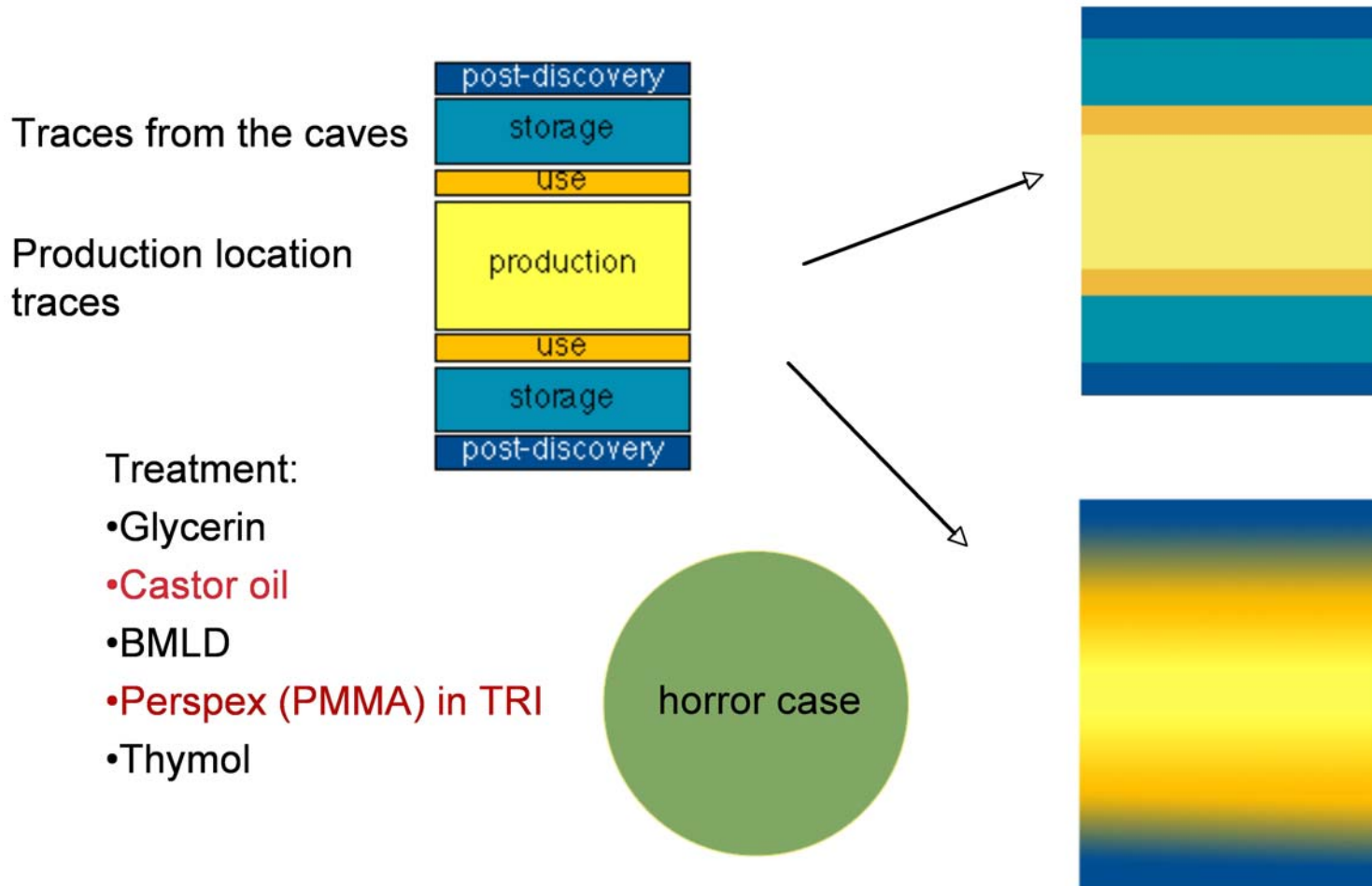
Were sectarian texts written in Qumran?

Was any parchment produced locally?

Production of the inks

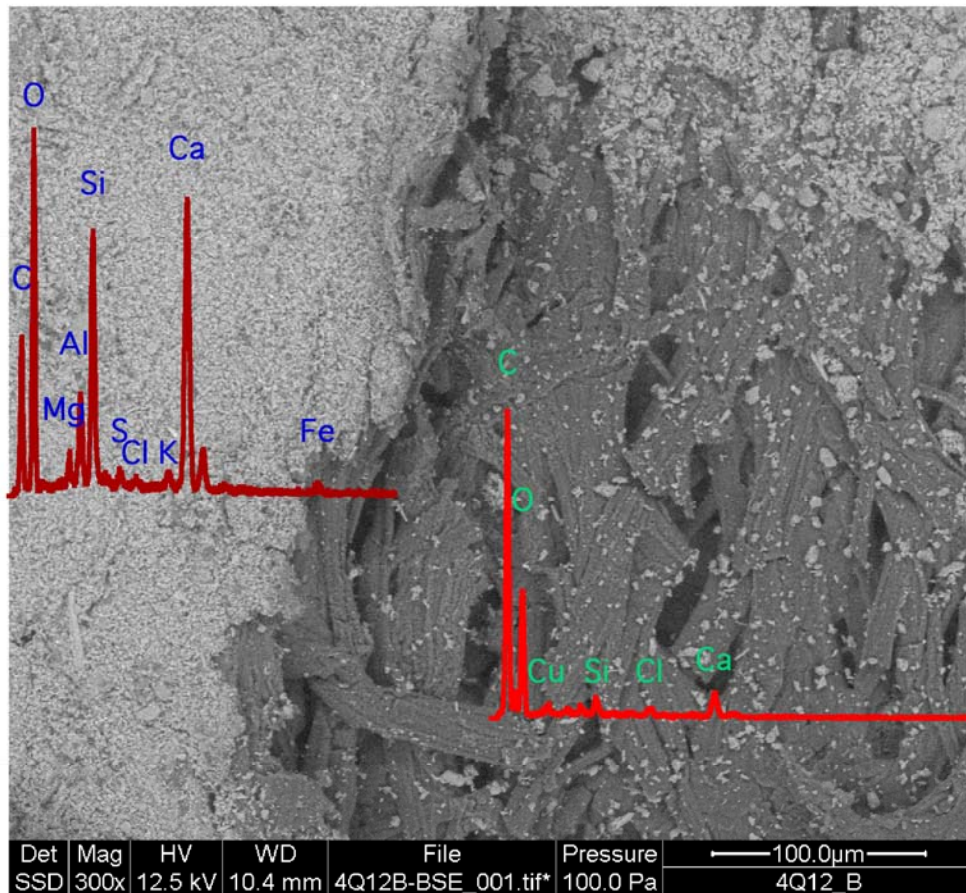
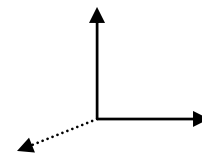
material characterization

Historical information stored in the scroll material



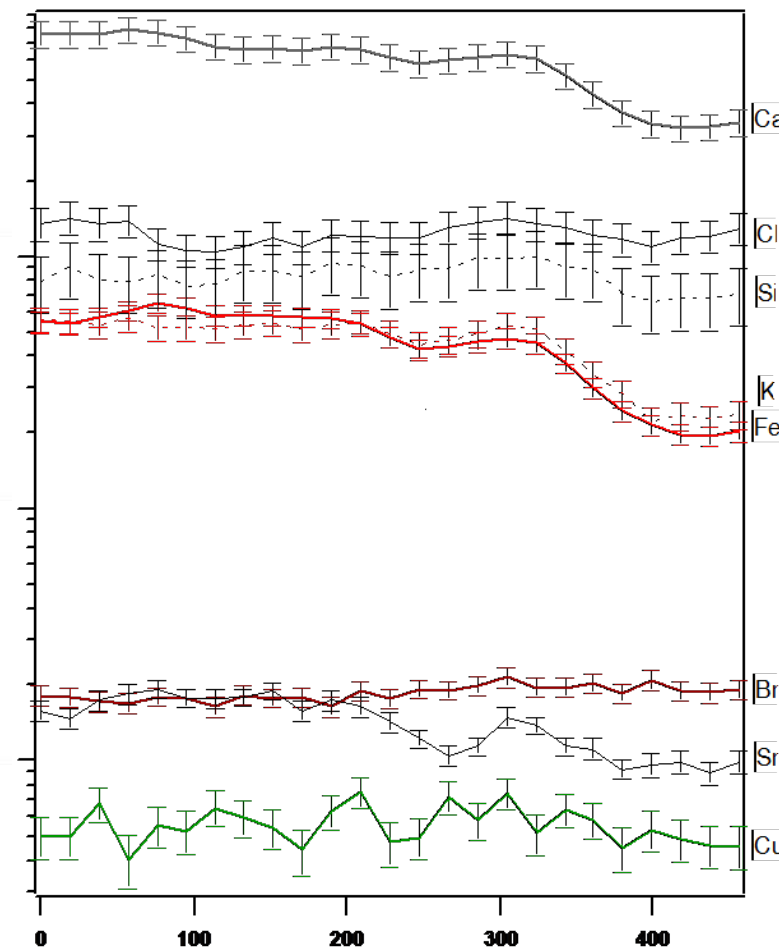
fragment from Cave 4: x,y

Characterization with **SEM, EDX, micro-XRF** (@ FHI, BAM)

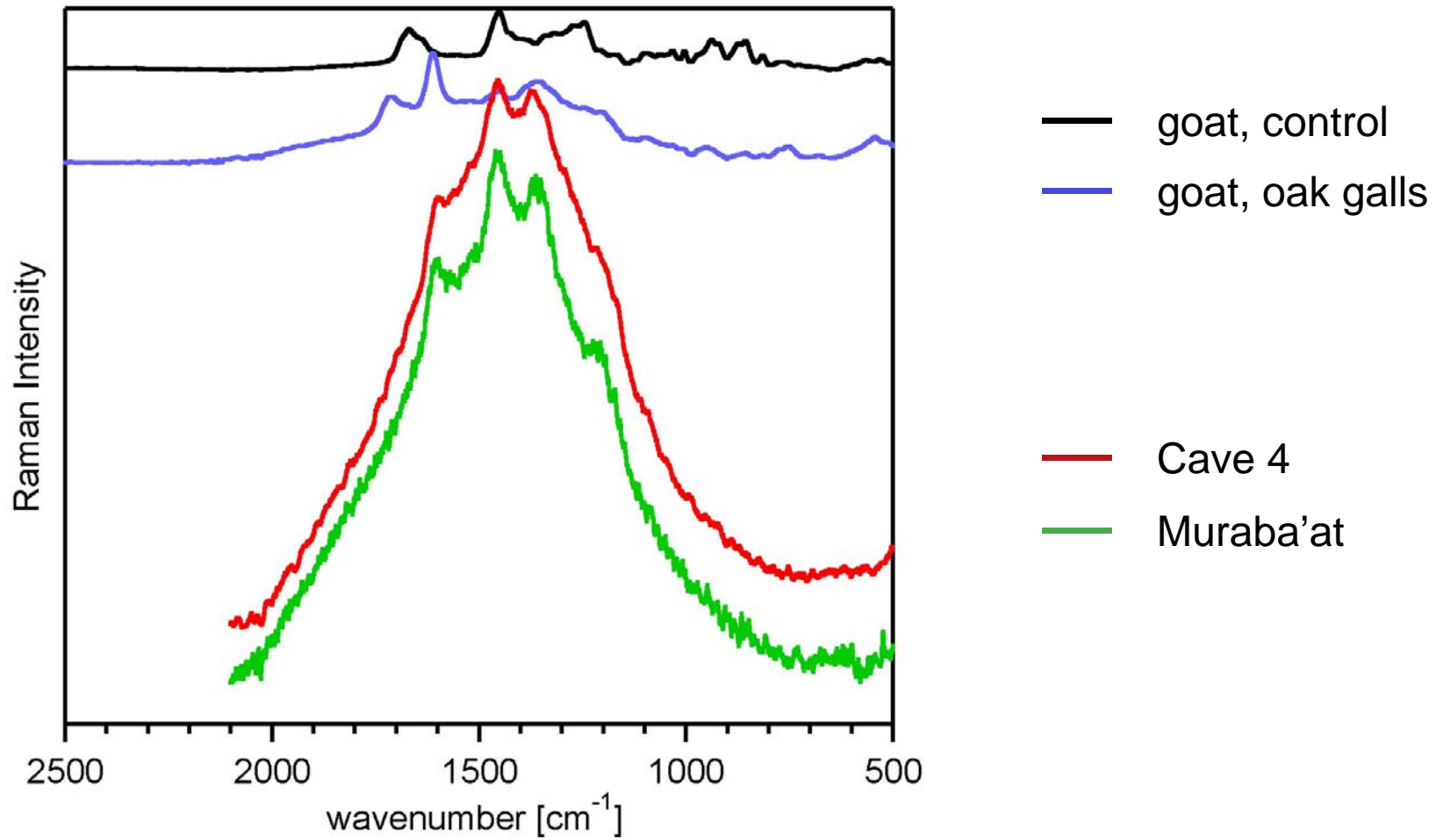


Deposits:
sand / calcite

Parchment:
collagen fibers



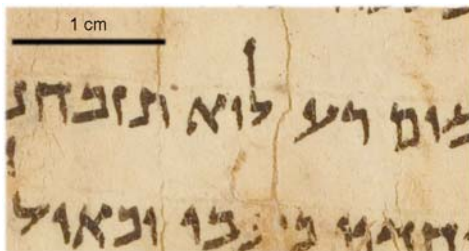
Raman analysis



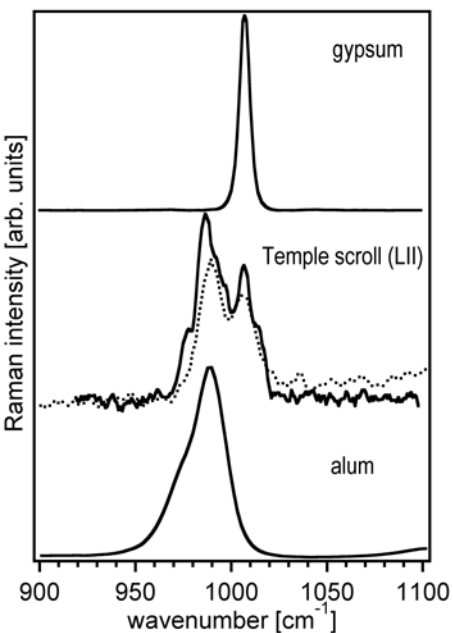
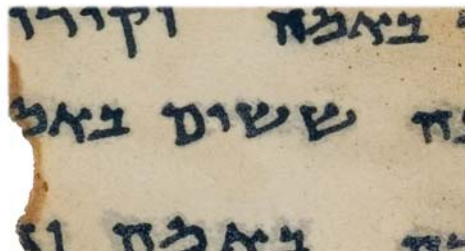
Conclusion: tanning was used indiscriminately.

parchment production: Temple scroll (II-VI) vs. (VII-LXVII)

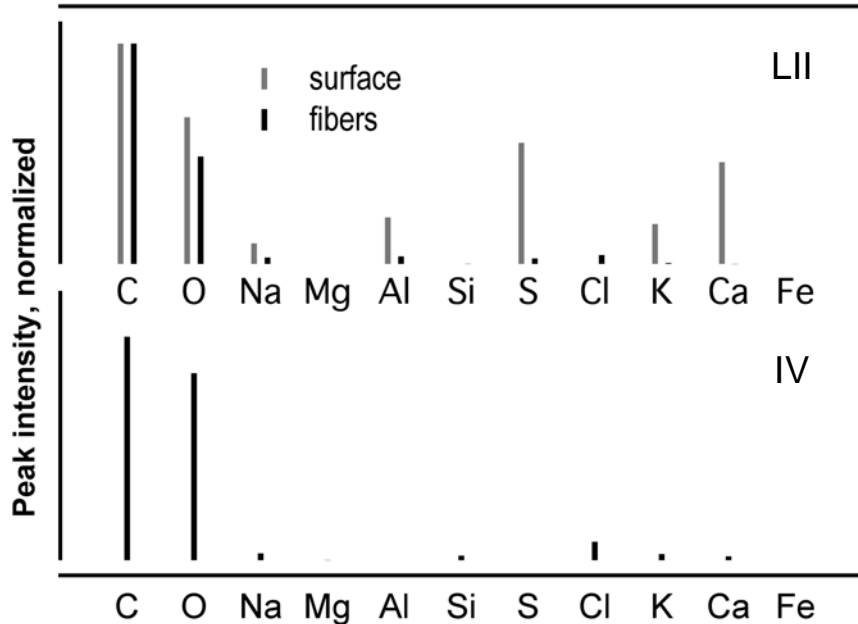
Column LII



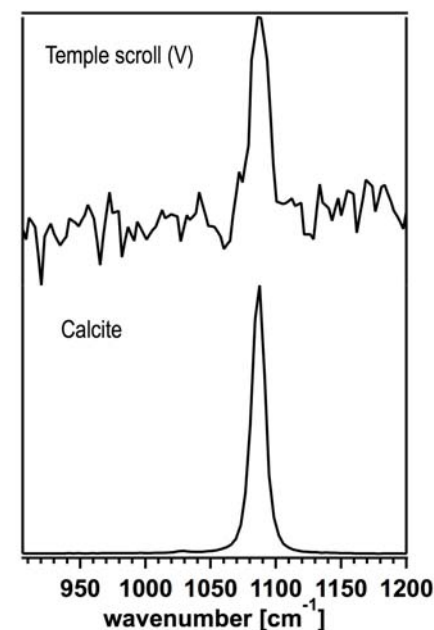
Column IV



Raman



EDX



Raman

Conclusion: two different preparation techniques used.

Parchment production: general questions

Production of parchment 3^d BCE - 4th CE

Split parchment?

Production of parchment in Orient

Introduction of liming and finishing

XRF parchment study:

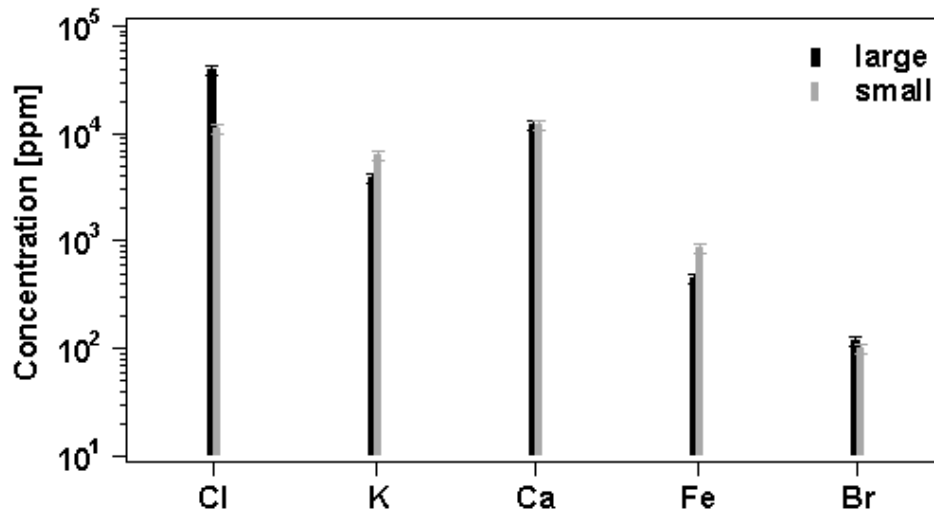
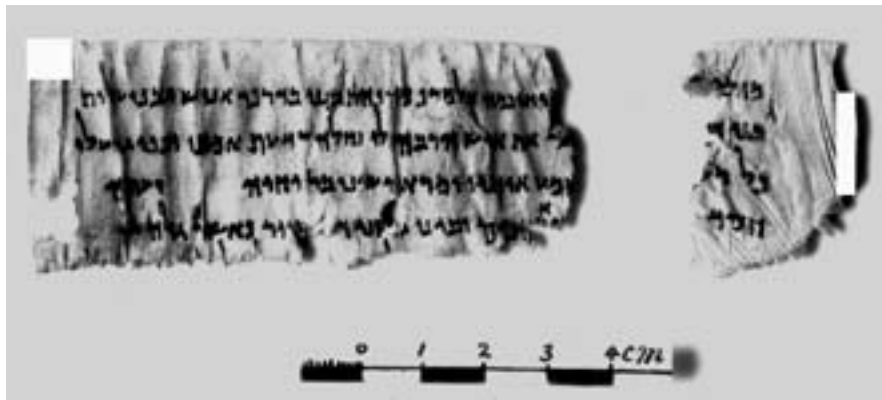
4Q413: A composition concerning Divine providence

	4Q413 large	4Q413 small
	Concentration/ppm	Concentration/ppm

Cl/Br

321

110



Conclusion: two pieces to don belong to the same sheet.