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## What infrared spectroscopy can do for characterizing organic remnant in fossils?

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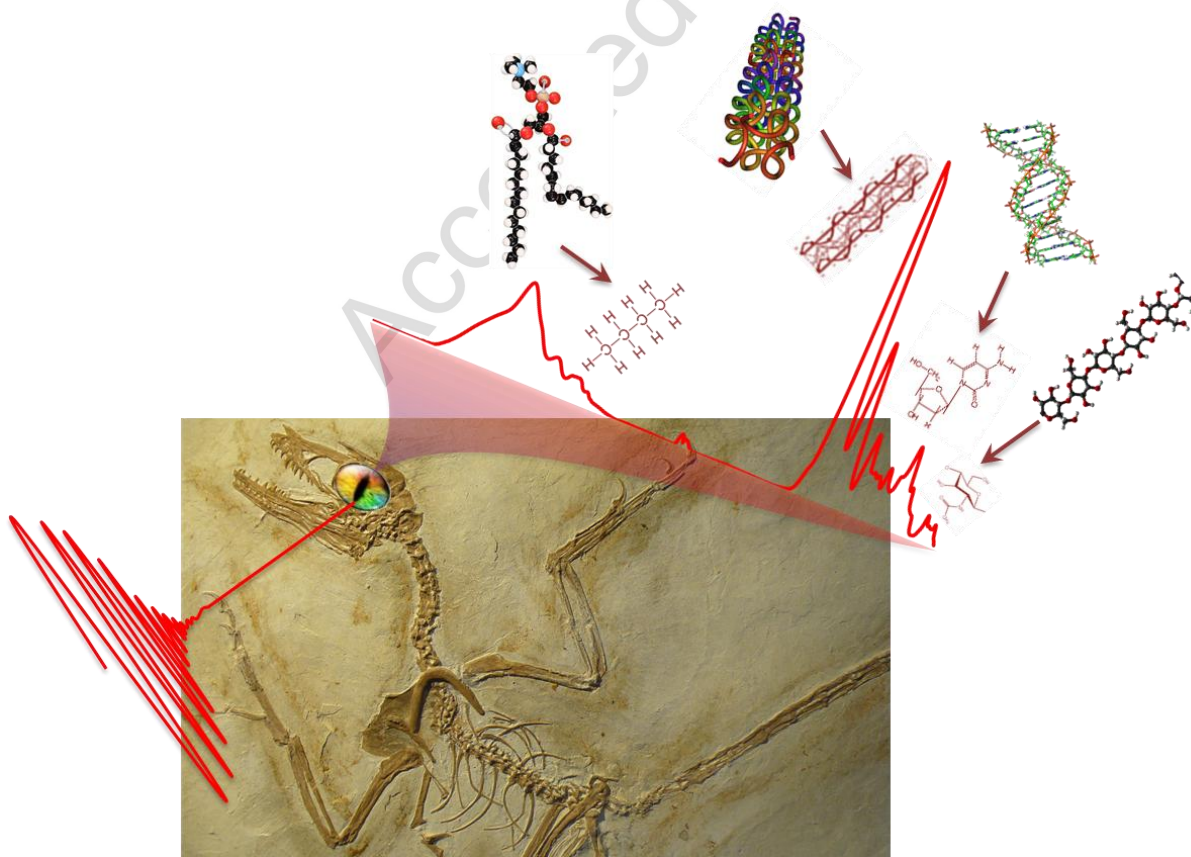
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### Highlights

- We show that FTIR microscopy allows characterizing organic remnants in fossils
- Decay of organic matter is time-dependent as probed by FTIR spectroscopy
- Most of interpretation mistakes done by the past are due to complexity of IR spectra
- Current molecular models of spectra can help interpreting organic remnants in fossils

**Graphical abstract:** Analyzing organic remnant in fossils with IR spectroscopy. Main organic species from diagenetically modified macromolecules can give rise to IR absorptions characteristic of aliphatic chains (from lipid contents), triple helix fragments (from cross-linked collagen fibers), phosphate groups (from DNA fragments), and sugar rings (from polysaccharides). Their presence in fossils can be demonstrated through crossed-comparison of related IR absorption bands.



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