Fig. 1. Field and photomicrograph of glauconite: (a) Field photograph of the sample location showing green and grey shale in section (green shale has been pointed). (b) Close up of the green shale facies rich in glauconite (Pen length = 10 cm). (c) Close up view of the grey shale facies rich in fossils of foraminifera (length of matchstick = 40 mm). (d) Thin section of the green shale facies in crossed polarized light showing glauconite occurring as pellets and few infillings within foraminifera shell (black arrows). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

Fig. 2. Reflectance spectra of USGS standard minerals viz. montmorillonite (montmor6.spc Montmorillonite CM 20), illite (illite2.spc Illite IMt-1.a) and glauconite (glauconi.spc Glauconite HS313.3B) available in usgs_min.sli library (ENVI, Ver. 5) and studied glauconite infilling and pellets in the 0.5–2.5 μm range (Abbreviations used for standards: mt – Montmorillonite, il – Illite, glt – Glauconite) [Inset: Enlarged view of the selected portions of the spectra of studied glauconite showing difference in depth of absorption between pellet and infillings at 0.77 μm (a) and 1.08 μm (b)] (Spectral offset given for clarity).

Fig. 3. Emissivity spectra of glauconite infillings and pellets in the 2–16 μm range showing a gradual decrease in the depth of the 2.8 μm band from infillings to pellets indicating the presence of less expandable smectitic layers in the later. A similar conspicuous shift in emissivity minima approximating 10 μm Si O band, progressively, towards higher wavelengths is noted with an increase in K+ content indicating diminishing expandable layers. (I and P in sample name column stand for glauconite infilling and pellet respectively with corresponding K+ content in bracket) (Spectral offset given for clarity).