

Spitzer spectroscopy of crystalline silicate features in 16 evolved stars

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The existence of amorphous silicate has been known for more than half century, while the spectral features of crystalline silicate were discovered in evolved stars only about two decades ago by the ISO space observatory. With the Spitzer/IRS spectrograph at high resolution mode, we observed 16 evolved stars selected by infrared colors. Eight of them (50%) are found to present the spectral features of crystalline silicates. Three have abundant spectral features of crystalline silicates, and one of them seems to have the highest crystallinity (about 85%) in evolved stars. The other five show only the feature around 33.5 micron. The relation of the crystallinity with the stellar parameters and mass loss rate will be discussed.