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Modeling of Circumstellar Dust by Non-Spherical Fractal grains

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Circumstellar Dust around stars is a well known phenomenon and our earlier work in modeling the dust around some of IRAS stars (which show strong 10 micron and 18 micron features) used non-spherical grains with silicate hosts and graphite inclusions or vacuum inclusions showed reasonable fits to the IRAS NIR spectra. In this paper, we have used fractal shape porous grains with similar composition and obtained fits to the IRAS data of about 700 O-rich objects. The fractal grains are more realistic as seen from recent space missions (viz. Impact mission etc) where grains are highly porous (more than 90% porous) and fractal in shape.