

# Dust from AGBs: from carbon to silicates, the role of the Hot Bottom Burning

Flavia Dell’Agli<sup>1,2</sup>

<sup>1</sup>INAF – Osservatorio Astronomico di Roma, Via Frascati 33, 00040, Monte Porzio Catone (RM), Italy

<sup>2</sup>Dipartimento di Fisica, Università di Roma “La Sapienza”, P.le Aldo Moro 5, 00143, Roma, Italy

In order to better understand the role of Asymptotic Giant Branch stars as dust polluters in the Universe, we calculate the dust formed around AGBs in the metallicity range  $0.015 \leq Z/Z_{\odot} \leq 0.4$ , following the complete evolution of models with masses in the range  $1 M_{\odot} \leq M \leq 8 M_{\odot}$ . We assume that dust forms via condensation of molecules within a wind expanding isotropically from the stellar surface. The dust formed is extremely sensitive to the initial mass of the star: carbonaceous grains are prevalent around lower mass objects, whereas high mass models produce silicates and corundum, because of the strong Hot Bottom Burning experienced. The transition between the two regimes occurs around  $3M_{\odot}$ , depending on the metallicity assumed. Dust production in low mass stars is almost independent of  $Z$ , whereas high mass objects increase the rate of silicates production with metallicity, because of the higher abundance of silicon, and of the softer HBB experienced. We also discuss the uncertainties connected with the model.