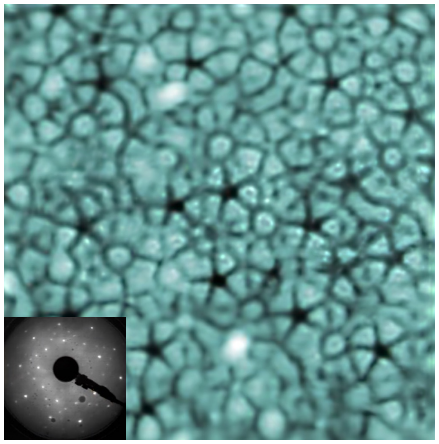

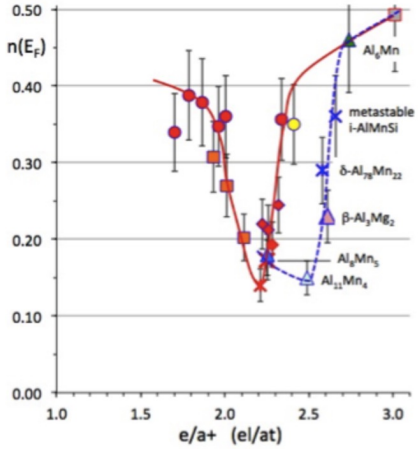

Many of the foreseen applications of quasicrystals take advantage of a surface property (wetting, adhesion, friction, infra-red absorption, catalysis, etc.). Such a property is made specific because of the collapse of the density of electronic states at the Fermi energy in comparison to its value in the pure components, especially aluminium. This property extents to the outmost atomic layers. The STM image on the left, and its corresponding LEED pattern in inset, illustrate how the atomic clusters are arranged at the very surface of a quasicrystal oriented along its 5-fold direction. In the middle is shown the partial density of sp electronic states in two families of Al-based compounds, each including a quasicrystal, which is located at the bottom of each curve, far below fcc Al represented by a square in the upper right corner. It is rather easy to mix up few compounds of these series, including a quasicrystal, and blend them in a polymer matrix. The resulting X-ray diffraction pattern supplies a unique signature that cannot be counterfeit, but unambiguously identifies the object to which it is attached. The figure on the right shows anti-fraud labels produced this way by a dedicated small company established in Nancy.