1056-19-559 **Semail ULGEN YILDIRIM*** (sulgen@math.northwestern.edu), 2033 Sheridan Rd, Lunt Hall 223, Evanston, IL 60208. *Tiling spaces and the Baum Connes Conjecture.* Preliminary report.

We recall the work on crossed product C^*-algebras such as the C^*-algebra $A = C(\Omega) \rtimes R^d$ where R^d acts on $C(\Omega)$ by translations and the hull (tiling space) Ω is a compact space formed by translations of a given tiling T. J. Bellissard defined the notion of a hull (Ω, R^d, T) to model aperiodic solids. The hull is a dynamical system with group R^d acting by homeomorphisms on a compact metrizable space. In the case of a perfect crystal, with translation group G, the hull is homeomorphic to the $d-dimensional$ torus T^d. With any dynamical system, there is a canonical C^*-algebra, namely the crossed product C^*-algebra $A = C(\Omega) \rtimes R^d$. We modify this algebra by enlarging the hull after including rotational symmetry in addition to translational symmetry on tiles, in particular on aperiodic tilings and call it the modified Bellissard Algebra. In the periodic case one can study the K-theory of this modified C^*-algebra and try to detect the type of the crystal. We briefly recall Baum-Connes Conjecture and mention the use of the proven results of this famous Baum Connes Conjecture. (Received September 12, 2009)