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Turkish Journal	Self-Assembled Nano-Structures on the Icosahedral AI-Pd-Mn Quasicrystal
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Keywords Authors	Abstract: A quasicrystal is a solid with an aperiodic atomic distribution, but displaying discrete diffraction pattern. At an interface where an ordinary crystal and a quasicrystal intersect, the lack of commensurability between the structures leads to misfits on atomic scale resulting in a wealth of novelties. Here, we present experimental observations on three essentially different cases: Al, Fe, and Si ultra-thin layers grown in vacuum on the pentagonal surface of an icosahedral Al-Pd-Mn quasicrystal. In all three cases, the growing layer decays into nm-size islands. Al is the major alloy component of the substrate material and provides a natural tool to investigate the surface structure. Fe offers an insight into nano-scale magnetism. Si is a classical candidate to explore quantum-confinement effects.
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