An Pang Tsai – a chemist

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The name of An-Pang Tsai is in first line connected with his pioneer work on quiasicrystalline and related crystalline materials, e.g. on the atomic structure of quasicrystals [1]. Less known are the studies of his group on chemical properties, in particular on catalytic materials. A mutual origin of the interest to this research field may be found in the search for possible application fields for quasicrystals and investigations on surface properties of quasicrystalline and approximant phases, i.e. oxidation behaviour [2] or etching reactions [3]. Logical continuation of these studies is the work of An Pang Tsai and his group on hydrogen absorption on intermetallic compounds [4,5] and high catalytic activity of amorphous intermetallic hydrides in hydrogenation of ethylene and CO_2 [6,7]. The subsequent studies were devoted to the influence of real structure of materials (Renee catalyst) or electronic factors on the catalytic activity [8,9]. Coming back to the possible applications of quasicrystals, the group of A. P. Tsai was working on activation of quasicrystalline surface and fabrication of a fine nanocomposite layer with high catalytic performance [10]. In the following years several new results were produced by A. P. Tsai and his co-workers on composite catalyst with mixed lamellar structures and dual catalytic functions, dominant factors of porous gold for CO oxidation, effects of Cu oxidation states on the catalysis of NO+CO and N_2O+CO reactions, preparation of dispersive Au nanoparticles on TiO_2 nanofibers from Al-Ti-Au intermetallic compound. The last product of the work of An Pang Tsai in the field of catalysis – although not finished by himself – was the special issue of Science and Technology of Advanced Materials giving an comprehensive overview of current research activities around the world [11].

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