

Nanotechnology exploitation and exploration

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The applications of tailoring materials and their properties at the nanoscale still have to be fully unveiled. The character of the related research varies is somewhat half-way between basic and applicative, with variable equilibrium. Industry can cooperate with academic researchers at all points of this scale, from posing targeted applicative problems to keeping an applicative, or engineering eye on basic research problems. Here, examples of cooperation between industry and academy on nanotechnology research streams are briefly sketched, ranging from more applicative (integration of optimized light sources into biomedical lab-on-chip devices) to intermediate (electronic devices in ballistic conduction regime for ultra-fast applications) up to basic research (advanced computing with analog memristors or at the molecular scale). At any level, the exploring and exploiting viewpoint are intertwined with interesting and sometimes surprising outcomes.