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## Hybrid organic spin valves

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## Stellingen

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### Hybrid Organic Spin Valves Interfaces and Transport

1. At the Co/pentacene interface the hole injection barrier amounts to 1.0 eV, in contrast with the similar values of the work function of Co (5.0 eV) and the ionization potential of pentacene (4.9 eV). (*this thesis - Chapter 4*)
2. A thin aluminum oxide layer introduced in between Co and pentacene lowers the hole injection barrier by as much as 0.6 eV. (*this thesis - Chapter 5*)
3. Matching the resistance of pentacene with that of the Co/AlO<sub>x</sub> spin injector/detector (required to overcome the conductivity mismatch problem) can be realized using the field effect transistor geometry. (*this thesis - Chapter 6*)
4. Until now, all electrical spin injection and detection has only been unambiguously proven in materials with good capabilities of carrying current.
5. In the Nobel lecture 1966 R. P. Feynman said: "We have a habit in writing articles published in scientific journals to make the work as finished as possible, to cover up all the tracks, to not worry about the blind alleys or describe how you had the wrong idea first, and so on. So there isn't a place to publish, in a dignified manner, what you actually did in order to get to do the work". Perhaps, a PhD thesis could represent (at least partially) the place Feynman was looking for.
6. At the end of the PhD studies, the student would write several scientific papers and the thesis. It is more time efficient to write the thesis first and then the papers.
7. When publishing scientific papers one should always keep in mind that the quality and not the quantity matters in the end.
8. Falsifying scientific results for attracting research funds or just fame is simply incomprehensible.

*Mihăiță Popinciuc*