

Tool	Solvias offers	Additions through project
Catalytic enantio- and diastereo-selective reactions	<ul style="list-style-type: none"> Better than state of the art in hydrogenation State of the art in many other transformations 	<ul style="list-style-type: none"> Several classes of new ligands Technology to immobilize and functionalize ligands
Catalytic chemo-selective reactions	<ul style="list-style-type: none"> State of the art and better for many catalytic reactions, esp. with modified heterogeneous catalysts 	<ul style="list-style-type: none"> New ligands and catalyst systems
C-C coupling	<ul style="list-style-type: none"> State of the art and better in Heck, Suzuki, Sonogashira and carbonylation reactions 	<ul style="list-style-type: none"> New know-how for the activation of Ar-Cl Direct method for 1° amide synthesis New catalysts and precursors
Oxidation	<ul style="list-style-type: none"> Know-how in dehydrogenation and other selected oxidation reactions 	<ul style="list-style-type: none"> Assessment of area Know-how in the oxidation of benzylic carbon atoms and of alcohols
Immob. / funct. Ligands	<ul style="list-style-type: none"> Better than state of the art technology 	<ul style="list-style-type: none"> New functionalized ligand classes
Fast Screening	<ul style="list-style-type: none"> State of the art equipment, efficient screening 	<ul style="list-style-type: none"> Improvement of equipment Improvement of productivity Profiling of ligands
Precursor/ ligand collection	<ul style="list-style-type: none"> Better than state of the art collection Technical quantities of selected ligands 	<ul style="list-style-type: none"> Addition of significant number of new ligands and precursors
Metal removal	<ul style="list-style-type: none"> Kit for the removal of trace metal 	<ul style="list-style-type: none"> Improved know-how through functionalization of ligands

Table 2. Solvias Catalysis Toolbox and additions through the TAB project

Concerning cooperation: Solvias has just started a three-year project with A. Pfaltz on chiral ligand synthesis, partially financed by the Swiss Government *via* KTI (Commission for Technology and Innovation); similarly we have initiated a joint research project with Ciba LSM on a similar topic. At the moment M. Studer is also actively involved in the discussion on the role of catalysis within the sixth EU framework program.

Acknowledgements

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Laudatio for Benoît Pugin, the First Solvias Leading Scientist

François L'Eplattenier*

Abstract: On June 25, 2001, Prof. Dr. François L'Eplattenier presented the first 'Solvias Leading Scientist' award to Dr. Benoît Pugin, Solvias AG.

Keywords: Solvias Leading Scientist · Spin-off and outsourcing · Success factors for R&D in small companies.

Dear Leading Scientist, Ladies and Gentlemen,

before coming to the laudatio of Solvias' first leading scientist, I would like to make some comments on industrial R&D and to describe a few key success factors for its management, particularly in smaller enterprises. This will bring me back to today's award ceremony and to our laureate.

Among the numerous expressions of the so-called Wall Street English, let's focus on the following four:

- Spin-off and Outsourcing
- Start-up and Insourcing

As you well know, a spin-off company usually emerges out of a big corporation, whose management decided to outsource some of its activities which are no longer needed or which are no longer considered as core activities. A spin-off

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is a self-contained organisation, having all the necessary functions to operate as a business, generating revenues and hopefully profits. If not, investors will put the necessary pressure to make a spin-off profitable as soon as possible.

In contrast, the majority of start-ups originate from universities. At the time of their creation, they don't have a finalised business plan, a complete management team, they don't generate revenues, instead of profits they have a burn rate and need a lot of nursing. Most start-ups are technology platform companies, totally dependant on external investors to finance their development. In the life sciences sector big Pharma use these high-tech boutiques for their insourcing activities. Pluri-disciplinarity of R&D activities as well as the speed with which new knowledge is generated do not allow even companies with huge R&D budgets to be up-to-date in all disciplines in a timely fashion, and time is of the essence. Insourcing knowledge from such biotech boutiques has not only the advantage of providing the flexibility to respond rapidly to changes in technology and the ability to access new expertise but also allows big Pharma companies to overcome inward focus.

To summarise: the big challenge for the management of a start-up is to learn how to turn scientific results into money. And for a spin-off, in the high-tech field like Solvias, one of the main challenges is not to forget that its roots are in science and technology and to dedicate enough resources to access new knowledge. This brings me to the, in my view, most critical success factors in the creation and management of a spin-off company.

1. Management must be able to induce and implement a change of culture. Leaving a super tanker like Novartis for a smaller boat such as Solvias gives you a great feeling of empowerment and responsibility for what you are doing. But at the same time you are much more exposed to changing weather conditions and you have to adapt your navigation to them. Change becomes a part of everybody's everyday life; it must no more be considered as a threat but as a challenge opening new opportunities.
2. Remain among the best in the business you are in. In order to achieve that, a company must deliver services/products at a competitive price/ performance ratio, fulfilling needs of customers or creating new needs in the market. For a high-tech company like Solvias the only way to remain

competitive and to strengthen its competitive position is to offer intelligent, high-added-value products and services. This implies that the company must remain up-to-date with the state of the art in its specific fields of expertise and be able to anticipate new technological and scientific developments. In order to rejuvenate existing knowledge and generate new expertise, a high-tech company must remain active in a certain number of research areas. It is not good enough to read and listen about scientific topics to become an expert in a specific field, you have to be actively involved in research, you have to practise science. Of course it is not necessary to generate all knowledge in-house, some of it can be insourced. But in order to know where you have to go shopping and in order to interact efficiently with the external scientific community, a high level of internal scientific competence is needed.

In that perspective it is vital for Solvias to remain attractive for excellent scientists and to create working conditions that keep them motivated over a long period of time, despite the pressure of everyday business. What does that imply? Of course a Solvias scientist has to accept that his/her projects have to be strategically aligned with business, must be in line with the business strategies. On the other side he/she must be given enough freedom in the execution, in the way he/she wants to approach and solve the problem. He/she must know that new innovative ideas are not an embarrassment for management, but that they are welcome; on the other hand the scientist must also be ready to be challenged on pet ideas, maybe with the consequence that a proposal is not considered, at least for the time being, as most relevant for the company. The bigger the pressure from the business side, the more difficult it is to preserve this kind of R&D activity in front of short-term-minded managers, focusing on today's bottom line. This can create a climate in which people working on projects not directly relevant for existing activities, but critical for the long-term survival of a company are discouraged and no longer motivated to pursue their efforts. To avoid such an evolution a company must implement an appropriate reward and recognition system according to which the scientific performance is evaluated not only as a function of quantitative criteria such as number of products or patents, kilos of reports, but also thanks to qualitative criteria, such as dif-

ficulty of the task, originality of the approach, long-term relevance for the company *etc.* And exactly this is the purpose for establishing this leading scientist award, recognizing I quote 'outstanding and ongoing scientific performance, relevance of scientific achievement to Solvias, recognition by the scientific community both inside and outside Solvias'.

And today, I have the privilege to introduce the first Solvias leading scientist, Dr. **Benoît Pugin**. Let me say a few words about his curriculum and tell you the reason why this recognition is awarded to him.

Benoît Pugin studied chemistry at the ETHZ and gained his PhD with Prof. Venanzi on reactions of amino-olefins with palladium. After a year as a postdoc at Ciba-Geigy working on a project related to molecular modelling, he joined Ciba-Geigy in 1983 as a scientist in the group dedicated to catalysis research. Finally he moved to Solvias when this company was created at the end of 1999 and the Research Services were outsourced from Novartis.

Among the numerous contributions of Benoît Pugin let me mention a few of the most important.

- Immobilisation of catalysts: successful development of a modular approach allowing the fast adaptation of various ligands to various supports with the linker of choice. This has for example led to the development of iridium complexes used in the synthesis of Dual Magnum, a discovery for which he was the co-winner of the Sandmeyer price in 1999.
- Development of new catalytic systems for the enantioselective hydrogenation of levopropritolin and folic acid.
- Discovery of very efficient donor/acceptor system allowing the oxidation of secondary alcohols under mild conditions.

In all areas of Benoît Pugin's research activity he was able to combine scientific excellence with business relevance. His contributions have been recognised in academia and industry world-wide, and are of great importance to portray Solvias as a leading company in the field of synthesis and catalysis.

I am, therefore, very pleased to present Benoît Pugin today with this well-deserved Solvias Leading Scientist Award and I congratulate him for this nomination.