For the fourth successive year, Merck Bioscience AG and Chemspeed Ltd. have come together to organize what has become one of the most important scientific events to take place in the early New Year. The positive experiences of past conferences, which were characterized by stimulating presentations coupled with high levels of audience participation, have motivated the organizers to continue this series of conferences in Basel. With the financial support of Maybridge and Merck CSS, abc Technologies 2004 took place at the Basel Hilton Hotel on January 22–23. 150 attendees enjoyed two days of lectures in the fantastic Auditorium Baloise. The aim of the conference, now called abc Technologies – abc stands for accelerated bio and chemical – is to provide a showcase for innovative technologies that accelerate the process from discovery to production in chemistry and biology.

Prof. Manfred T. Reetz from the Max-Planck-Institute in Mülheim/Ruhr (Germany) opened the conference with an excellent plenary lecture on combinatorial and evolution-based methods in asymmetric catalysis. He introduced a new principle in asymmetric catalysis which uses a binary mixture of two different chiral monodentate phosphite ligands based on the binol backbone to achieve higher enantioselective excesses in transition-metal catalytic reactions than when two identical ligands are used. This approach is ideally suited for application of automation and parallel synthesis techniques. He believes this new concept, which he termed ‘simulation of chelation’, has tremendous potential in enantioselective catalysis. The second part of the presentation was dedicated to directed evolution of enantioselective enzymes. Using evolutionary pressure for the generation of libraries of mutated enzymes and applying them in biotechnologically significant enzymatic reactions, he could screen ten thousands of enzymes. This ‘Darwinism in the test tube’ is one of the very hot spots in research to find new, highly active and superior catalysts for chemical reactions.

The second plenary lecture was given by Prof. Peter Hofmann from the University of Heidelberg (Germany). With the help of rational catalyst design, synthesis and optimization, a new class of tailor-made cationic ruthenium carbene complexes was created. A detailed analysis of mechanism coupled with careful synthesis led to new findings about ring opening metathesis polymerization (ROMP).