

DSM Science & Technology Awards (SOUTH) 2009	
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In my research project I developed efficient and “green” routes to optically pure sec-alcohols. These compounds are important building blocks for the synthesis of numerous bioactive compounds used in the pharmaceutical and food industry as well as for flavour and fragrances. Starting from a cheap racemic substrate - a 50:50 mixture of the image and mirror- image of the alcohol - exclusively one form (e.g. only the mirror image) was obtained as product in 100% yield in a formal one pot transformation. In this innovative approach two usually incompatible reactions (enantioselective oxidation/ asymmetric reduction) were run simultaneously in one pot by the use of highly specific biocatalysts (enzymes). The environmentally friendly biocatalytic method leads to the development of a new tool for (industrial) chemistry for the preparation of optically pure compounds.