

## Details on Project: A Directed Evolution System for Hydroxylases

### Focus Area

**Economic growth and international competitiveness**

### Particulars of Applicant

Project Leader	Prof Martie (MS) Smit
Faculty	Natural and Agricultural Sciences
Department/Unit/ Centre	Microbial Biochemical and Food Biotechnology

### Proposal Details

Title	<b>Set-up of a Directed Evolution System for Hydroxylating Enzymes</b>
Description	The goal of this project, which only commenced in 2007, is to establish at UFS directed evolution of self-sufficient cytochrome P450 monooxygenases and vanillyl alcohol oxidases.
Funding	Institutional Research Development Programme of the NRF

### Partners

Prof Martie (MS) Smit

## Details on Project: Mining fungal genome databases

### Focus Area

**Economic growth and international competitiveness**

### Particulars of Applicant

Project Leader	Prof Martie (MS) Smit
Faculty	Natural and Agricultural Sciences
Department/Unit/ Centre	Microbial Biochemical and Food Biotechnology

### Proposal Details

Title	<b>Mining fungal genome databases for cytochrome P450 monooxygenases and epoxide hydrolases</b>
Description	The goal of this project was initially to identify from the fungal genome sequences P450s and epoxide hydrolases that are of interest for applications either in biocatalysis or because of their possible role in mycotoxin production. Initial work was on both epoxide hydrolases and P450s, but is has shifted to only P450s. At present the focus is also exclusively on biocatalysis
Funding	NRF

### Partners

Prof Martie (MS) Smit

## Details on Project: Oxidative Biotransformation of Alkylphenols

### Focus Area

**Economic growth and international competitiveness**

### Particulars of Applicant

Project Leader	Prof Martie (MS) Smit
Faculty	Natural and Agricultural Sciences
Department/Unit/ Centre	Microbial Biochemical and Food Biotechnology

### Proposal Details

Title	<b>Oxidative Biotransformation of Alkylphenols</b>
Description	The goal of this project is to find enzymes that can convert alkylphenols to value added projects. Current focus is on the use of vanillyl alcohol oxidases.
Funding	DST-NRF Centre of Excellence in Catalysis

### Partners

Prof Martie (MS) Smit

## Details on Project: The Nature and Mechanism of Oxygenases

### Focus Area

**Economic growth and international competitiveness**

### Particulars of Applicant

Project Leader	Prof Martie (MS) Smit
Faculty	Natural and Agricultural Sciences
Department/Unit/ Centre	Microbial Biochemical and Food Biotechnology

### Proposal Details

Title	<b>The Nature and Mechanism of Oxygenases</b>
Description	The goal of this project is to gain an in depth understanding of the factors that are critical for the biocatalytic conversion of alkanes. The process is considered on both the cellular and enzyme level.
Funding	DST-NRF Centre of Excellence in Catalysis

### Partners

Prof Martie (MS) Smit