

**The Optical Remote Sensing group
Department of Earth and Space Sciences
Chalmers University of Technology, Gothenburg**



**Development and application of
optical remote sensing methods for
atmospheric research**



Methodologies
UV -VIS - IR
DOAS, FTIR
Artificial and natural light sources
(Sun, sky, hot lava)



Applications:
Urban air pollution
Industrial emissions
Stratospheric ozone
Climate gas emissions
Ship emissions
Volcanic gas



Experience related to volcanology

Coordinator of 2 EU-projects:

DORSIVA (*Development of Optical Remote Sensing Instruments for Volcanological Applications, 2002 - 2005*)

mini-DOAS, scanning DOAS, Solar FTIR

NOVAC (*Network for Observation of Volcanic and Atmospheric Change, 2005 - 2010*)

implementation of 64 Scanning mini-DOAS instruments on 24 volcanoes worldwide

Cross crater FTIR and DOAS measurements with artificial light

Mobile and stationary Solar FTIR

Passive FTIR (using hot lava)

Passive diffusive samplers

Chalmers tasks in FUTUREVOLC

- Develop a version of the NOVAC instrument adapted for Icelandic conditions (low light, freezing)
- Install 2 NOVAC instruments on Hekla for automatic measurement of total SO₂ gas emission
- Develop 2 NOVAC instrument for rapid deployment and prepare sites on 4 additional volcanoes
- Adapt data streams and formats to FUTUREVOLC standards
- Participate in Demonstration activities
- Coordinate WP 5.3, Volcanic gas and river water chemistry