

## INFLUENCES OF OIL, FUEL & CATALYST ON PARTICLE EMISSIONS OF A DI 2-STROKE SCOOTER

J. Czerwinski<sup>1</sup>, F. Reutimann<sup>2</sup>

<sup>1</sup>*University of Applied Sciences Biel-Bienne, IC-ENGINES AND EXHAUST GAS CONTROL, Nidau, Switzerland*

<sup>2</sup>*Buwal, Switzerland*

Limited and unlimited emissions of scooters were analysed during several annual research programs of the Swiss Federal Office of Environment Forests and Landscape (FOEFL). Small scooters, which are very much used in the congested centers of several cities are a remarkable source of air pollution. Therefore every effort to reduce the emissions is an important contribution to improve the air quality in urban centers. In the present work detailed investigations of particle emissions of a Peugeot scooter with TSDI (Two Stroke Direct Injection) were performed. The nanoparticulate emissions were measured by means of SMPS, (CPC) and NanoMet. Also the particle mass emission (PM) was measured with the same method as for Diesel engines. It can be stated, that the oil and fuel quality have a considerable influence on the particle emissions, which are mainly oil condensates. Not all influences can be explained and more detailed knowledge about the oil composition and about the used additive packages is necessary. The use of non-active catalyst leads to strongly increased particle emissions values, both mass and counts. Since the particulate emission of the 2-S consists mainly of lube oil condensates the minimization of oil consumption stays still an important goal.