

# **Automatic FPI Systems For Automotive Industry**

**Ondrej Doubek<sup>1</sup>, David Novak<sup>2</sup>**

<sup>1</sup>Sales Department, ATG (Advanced Technology Group), Czech Republic, <sup>2</sup>Sales Department, Ltd., Czech Republic

Already high volume of produced cars worldwide is still increasing every year and therefore high speed testing of automotive parts is more and more important. Also rising requirements on safety together with influence of electromobility on higher and higher weight of vehicles are bringing more and more structural, suspension and other parts to surface crack detection systems. In order to satisfy the demand, various types of automation is usually necessary. Mass testing by immersion system usually results in excessive consumption and therefore expenses for penetrant, reduced sensitivity of the system and complications with cleaning of parts after testing. Alternative approaches by e.g. spraying often face problem with low productivity and/or limited floor space. Specialized FPI lines developed by company ATG Ltd. for automotive industry use continuous conveyor systems with application of penetrant typically by electrostatic spraying and positions situated in several levels in order to reduce requirements on floor space. Because customer requirements may differ by type of product, testing requirements, or equipment dimensions, such systems are usually customized for customer needs. The system can be made ready for semiautomatic or fully automatic evaluation by special cameras using unique software evaluation based on neural networks, which in ATG currently developing. Automatized manipulation may be offered as well.