

Thermography for Quality Assurance

ImagelR® – precise, reliable and fast

Today thermal power stations by the SIEMENS AG are more than ever complex high-tech products. They provide a continuous and reliable electrical power supply for industry and population worldwide. They do this using fossil fuels very efficient and therefore exceptionally friendly for our environment. To achieve this highest quality of every single component is absolutely imperative. Thus heavily stressed parts like the turbine blades are tested with the latest measurement techniques for example with infrared thermography.

SIEMENS AG
Energy Sector
Fossil Power
Generation Division

www.energy.siemens.com

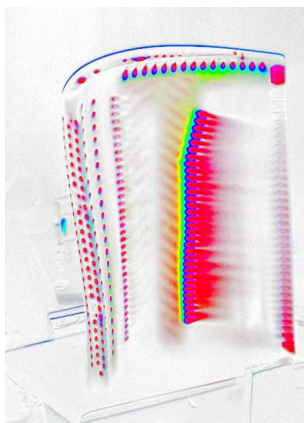
InfraTec Solution:
ImagelR® 8320



Tristan Sczepurek

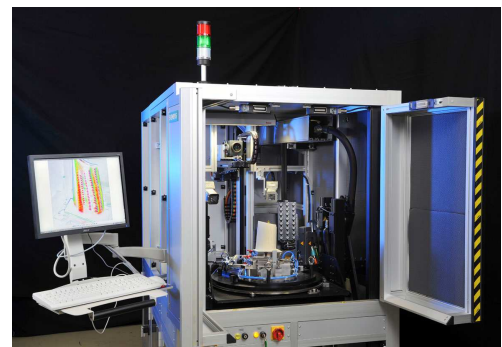
During the production of the turbine blades for thermal power stations the Siemens AG uses ceramic coatings since higher entry temperatures to the turbine blades are reachable which increases efficiency. Thereby it is necessary to ensure the correct application of the coatings without any losses at the flow channels. Mr. Sczepurek together with his team takes the responsibility for the required test techniques and processes. Out of the range of non-destructive testing methods he chose infrared thermography as it allows for checking large turbine areas particularly fast and reliable at the same time.

InfraTec supports this quality assurance by supplying high-performance and reliable infrared cameras from its own ImagelR® series manufactured in Dresden. The geometric resolution of 640 x 512 pixels being high for commercial, cooled thermal cameras provides together with a fast frame rate the necessary prerequisites to realize the test of every turbine reliably but also in economically justifiable time.



Thermographic testing of turbine blades

A fast motorized focussing as well as a data acquisition to the split millisecond and a camera control by a capable and customizable software of InfraTec also plays an important role. The flexible interface concept of the ImagelR® camera moreover allows for a seamless integration into the existing system environment.



Thermographic test bench

Additionally, the infrared cameras of the ImagelR® series can be combined with external excitation devices due to its precise trigger possibility. Thus, further parameters of turbine blades can be determined within the methodology of active heat flow thermography. Their analysis and practical application result in a further increase in efficiency for the customers of the thermal power stations of the SIEMENS AG.

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