

## Researchers honored with the 2015 WITec Paper Award for their outstanding scientific publications

The winners of this year's WITec Paper Awards have been announced. Research groups from Poland, Switzerland and Singapore won the Paper Awards in gold, silver and bronze, respectively. The annual awards honor outstanding scientific publications that feature results acquired with a WITec instrument. Scientists from all over the world submitted more than 80 publications, from between January and December 2014, to this year's competition. A jury chose the three winning papers from among the submissions. Selection criteria included the impact of the scientific results and the originality of the applied techniques.

The gold Paper Award goes to Katarzyna Marzec for her work on heme oxidation in red blood cells (erythrocytes). Hemes are the oxygen binding components of hemoglobin, the red pigment in blood. In their paper "*High resolution Raman imaging reveals spatial location of heme oxidation sites in single red blood cells of dried smears*" Marzec and colleagues from the group of Malgorzata Baranska at the Jagiellonian Centre for Experimental Therapeutics, Jagiellonian University, Krakow, Poland documented for the first time the spatial distribution of Fe<sup>2+</sup>/Fe<sup>3+</sup> hemes inside single erythrocytes combining various microscopic techniques such as confocal Raman imaging, atomic force microscopy, and scanning near-field optical microscopy. This work convinced WITec's jury by illustrating the beneficial application of confocal Raman imaging combined with AFM for research in life science.

The WITec Paper Award in silver is presented to Martin Süess from the ETH in Zurich (Switzerland). Süess from the group of Ralph Spolenak together with other Swiss and French colleagues analyzed strain in complex three-dimensional nanobridges. The paper "*Power-dependent Raman analysis of highly strained Si nanobridges*" describes how a combination of micro-Raman spectroscopy and finite element analysis is used to develop a better understanding of strain on silicon nanobridges.

The bronze WITec Paper Award winners are researchers from the Department of Physics at the National University of Singapore. Chunxiao Cong and Ting Yu published a study on folded graphene: "*Enhanced ultra-low-frequency interlayer shear modes in folded graphene layers*". Through comprehensive Raman imaging studies the scientists analyzed shear modes in few-layer graphene that due to their extremely weak signal are very difficult to detect.

WITec recently announced the WITec Paper Award 2016 for research published in 2015. Scientists from all fields of application in both academia and industry are invited to submit their publications featuring results acquired with a WITec instrument to [papers@witec.de](mailto:papers@witec.de).

**WITec Paper Award 2015 winning publications:**

Katarzyna M. Marzec, A. Rygula, B.R. Wood, S. Chlopicki, M. Baranska. High-resolution Raman imaging reveals spatial location of heme oxidation sites in single red blood cells of dried smears. *J. Raman Spectrosc.* (2015); 46, 76-83. (doi: 10.1002/jrs.4600).

Martin J. Süess, R. A. Minamisawa, R. Geiger, K.K. Bourdelle, H. Sigg, R. Spolenak. Power-dependent Raman analysis of highly strained Si nanobridges. *Nano Lett.* (2014) ;14, 1249-54. (doi: 10.1021/nl404152r).

Chunxiao Cong and Ting Yu. Enhanced ultra-low-frequency interlayer shear modes in folded graphene layers. *Nat Commun.* (2014); 5, 4709. (doi: 10.1038/ncomms5709).

**Images download and captions**      <http://www.witec.de/assets/Press/WITec-PaperAward-2015-Gold.jpg>  
<http://www.witec.de/assets/Press/WITec-PaperAward-2015-Silver.jpg>  
<http://www.witec.de/assets/Press/WITec-PaperAward2015-Bronze.jpg>

*WITec Paper Award in Gold: Winner Katarzyna Marzec, second author Anna Rygula and senior author Malgorzata Baranska (from left to right) from the Jagiellonian University in Krakow are delighted to receive the Paper Award certificate in gold and a 500 Euro gift card from Maxime Tchaya, Application Scientist at WITec (left).*

*WITec Paper Award in Silver: The Paper Award Certificate in silver and a 300 Euro gift card is handed over to Martin Süess (right) from the Quantum Optics Group at the ETH Zürich (Switzerland) by Jan Toporski, WITec Sales Director Europe (left).*

*WITec Paper Award in Bronze: Cong Chunxiao (left) and Ting Yu (right) from the Nanyang Technological University in Singapore. Yu receives the Paper Award Certificate in bronze and a 200 Euro gift card from Shawn Lee from WITec Pte. Ltd. (Singapore).*

**About WITec:**

WITec is a leading German manufacturer of confocal and scanning-probe microscopes for state-of-the-art Raman, Atomic Force (AFM), and Scanning Near-Field Optical Microscopy (SNOM). WITec's headquarters is located in Ulm, Germany, where all WITec products are developed and produced. Branch offices in USA, Japan, Singapore, and Spain ensure a worldwide sales and support network. From the company's founding in 1997, WITec has been distinguished by its innovative product portfolio and a microscope design that enables combinations of the various imaging techniques within one system. An exemplar of the company's breakthrough development is the world's first integrated Raman-AFM microscope. To this day, WITec's confocal microscopes are unrivaled in sensitivity, resolution and imaging capabilities. Significant innovation awards document WITec's enduring success and innovative strength.

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