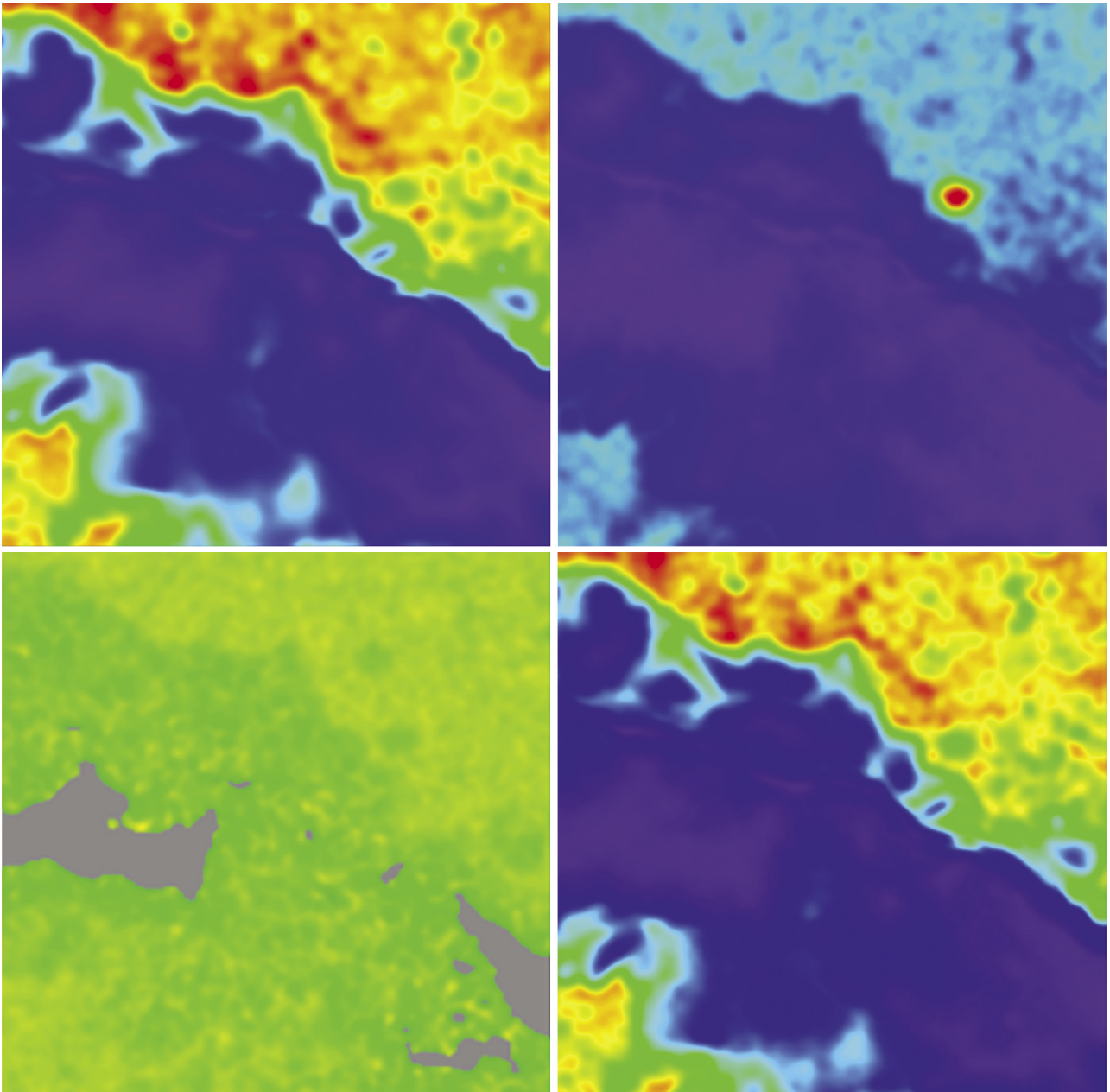


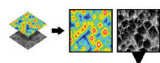
# Microscopy TODAY

Volume 26 Number 2 2018 March

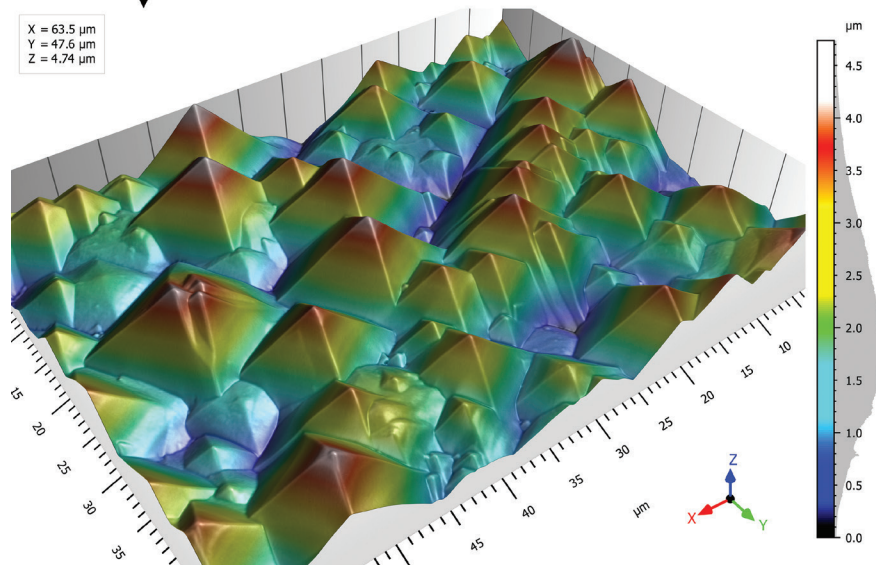


# The Optimal Solution for Quick & Easy SEM Surface Analysis

Hitachi map 3D is a unique surface analysis software solution developed by Digital Surf for Hitachi with their 25 years of experience with metrology technology. Hitachi map 3D makes surface analysis with the SEM fast, accurate, and easy.



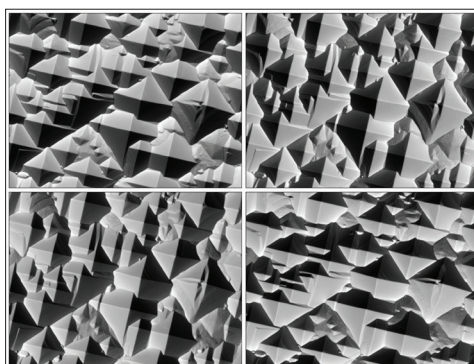
X = 63.5  $\mu\text{m}$   
Y = 47.6  $\mu\text{m}$   
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| Height Parameters     |                    |  |
|-----------------------|--------------------|--|
| Sq                    | 1.38 $\mu\text{m}$ | Root-mean-square height                          |
| Ssk                   | 0.148              | Skewness   |
| Sku                   | 2.63               | Kurtosis   |
| Sp                    | 4.32 $\mu\text{m}$ | Maximum peak height                              |
| Sv                    | 4.07 $\mu\text{m}$ | Maximum pit height                               |
| Sz                    | 8.39 $\mu\text{m}$ | Maximum height                                   |
| Sa                    | 1.12 $\mu\text{m}$ | Arithmetic mean height                           |
| Functional Parameters |                    |  |
| Smr                   | 0.642 %            | Areal material ratio                             |
| Smc                   | 1.88 $\mu\text{m}$ | Inverse areal material ratio                     |
| Sxp                   | 2.45 $\mu\text{m}$ | Extreme peak height                              |
| ISO 12781             |                    |  |
| Flatness Parameters   |                    |  |
| FLTt                  | 5.40 $\mu\text{m}$ | Peak-to-valley flatness deviation of the surface |
| FLTp                  | 2.58 $\mu\text{m}$ | Peak-to-reference flatness deviation             |

\*Digital Surf is a registered trademark of Digital Surf Corporation.

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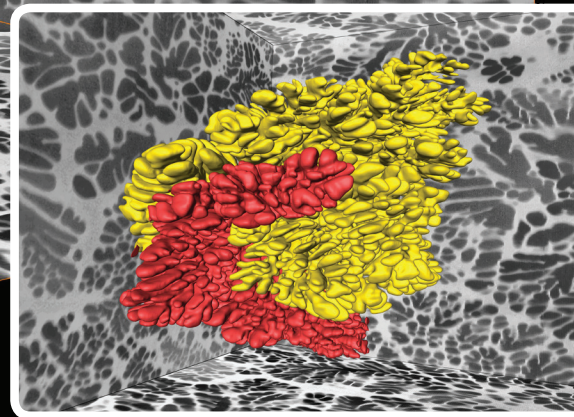
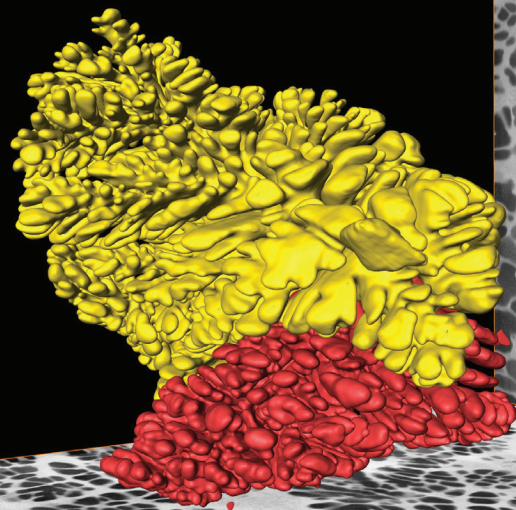
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Thermo Scientific™ Avizo™ 3D visualization of two large adjacent crystalline dendrites of a bulk-metallic-glass matrix composite ( $Zr_{58.5}Ti_{14.3}Nb_{5.2}Cu_{6.1}Ni_{4.9}Be_{11.0}$ ). Data was obtained by large volume serial sectioning tomography using the Thermo Scientific Helios™ PFIB DualBeam™ microscope. The sectioned block is about  $90 \times 80 \times 70 \mu m^3$ . Sample from The University of Tennessee, USA. Images courtesy of The University of Manchester.

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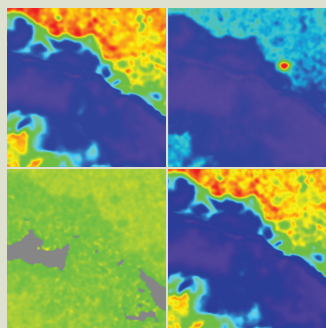
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### About the Cover



Secondary ion mass spectrometry maps of oxygen isotope ions. Clockwise from upper left:  $^{16}\text{O}^-$ ,  $^{17}\text{O}^-$ ,  $^{18}\text{O}^-$ , and  $^{18}\text{O}^-/^{16}\text{O}^-$ . Presolar grain revealed in map of  $^{17}\text{O}^-$ . Full width = 9.3  $\mu\text{m}$ .

See article by Floss.

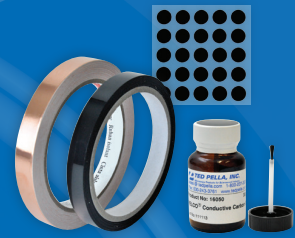


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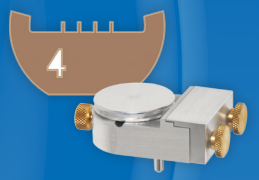
Rotary Stages



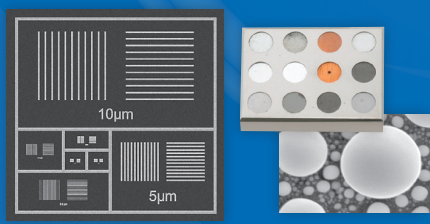
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