



Visualizations of 3D images of Microstructures: Cu/acrylic, AlNi- and Al-foams

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Summary

Sample Preparation

- Cu/acrylic, hot embedding of Cu powder by J. Reuteler
- AlNi foam, replica technique, purchased
- Al foam, replica technique, purchased

Data Acquisition

- X-ray CT with polychromatic source at EMPA Dübendorf

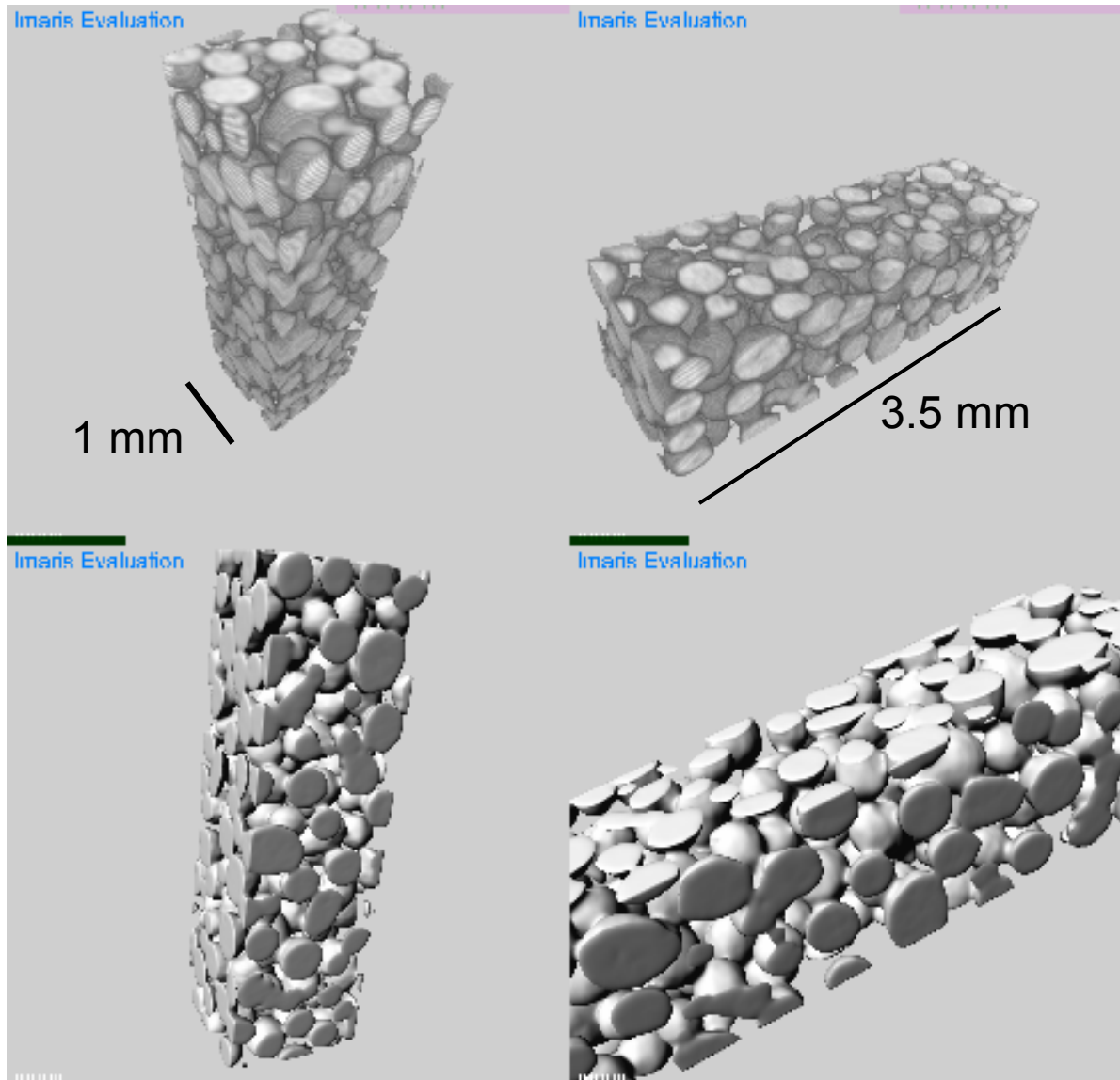
Image Processing

- Cropping, smoothing, contrast enhancement with ImageJ

Visualization

- Volume and Surface rendering with Imaris

Cu/acrylic 50 vol % of 100 to 200 μm Cu spheres



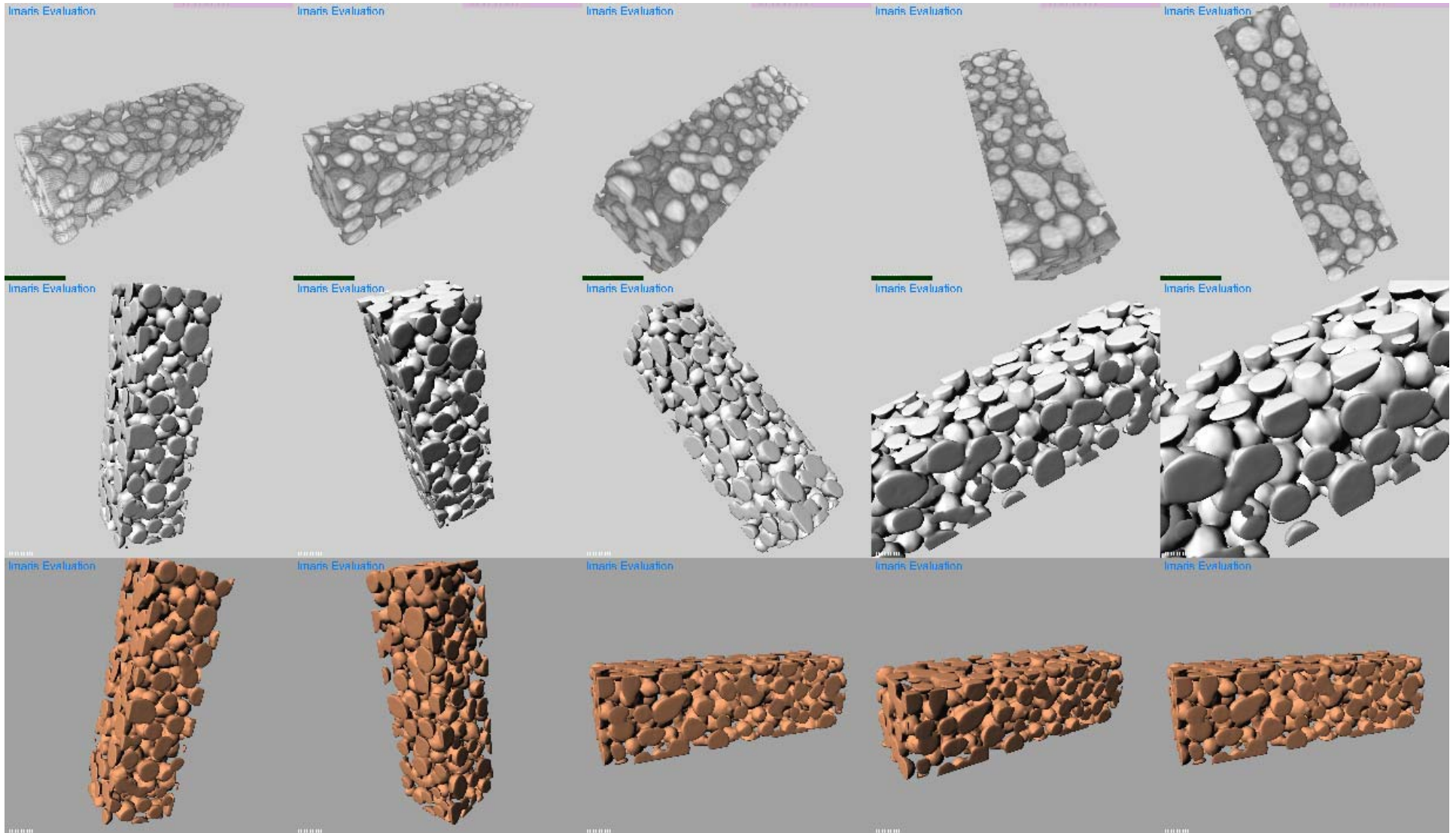
Dataset:

- $100^2 \times 350$ Voxels
- $10^3 \mu\text{m}^3$ Voxel size

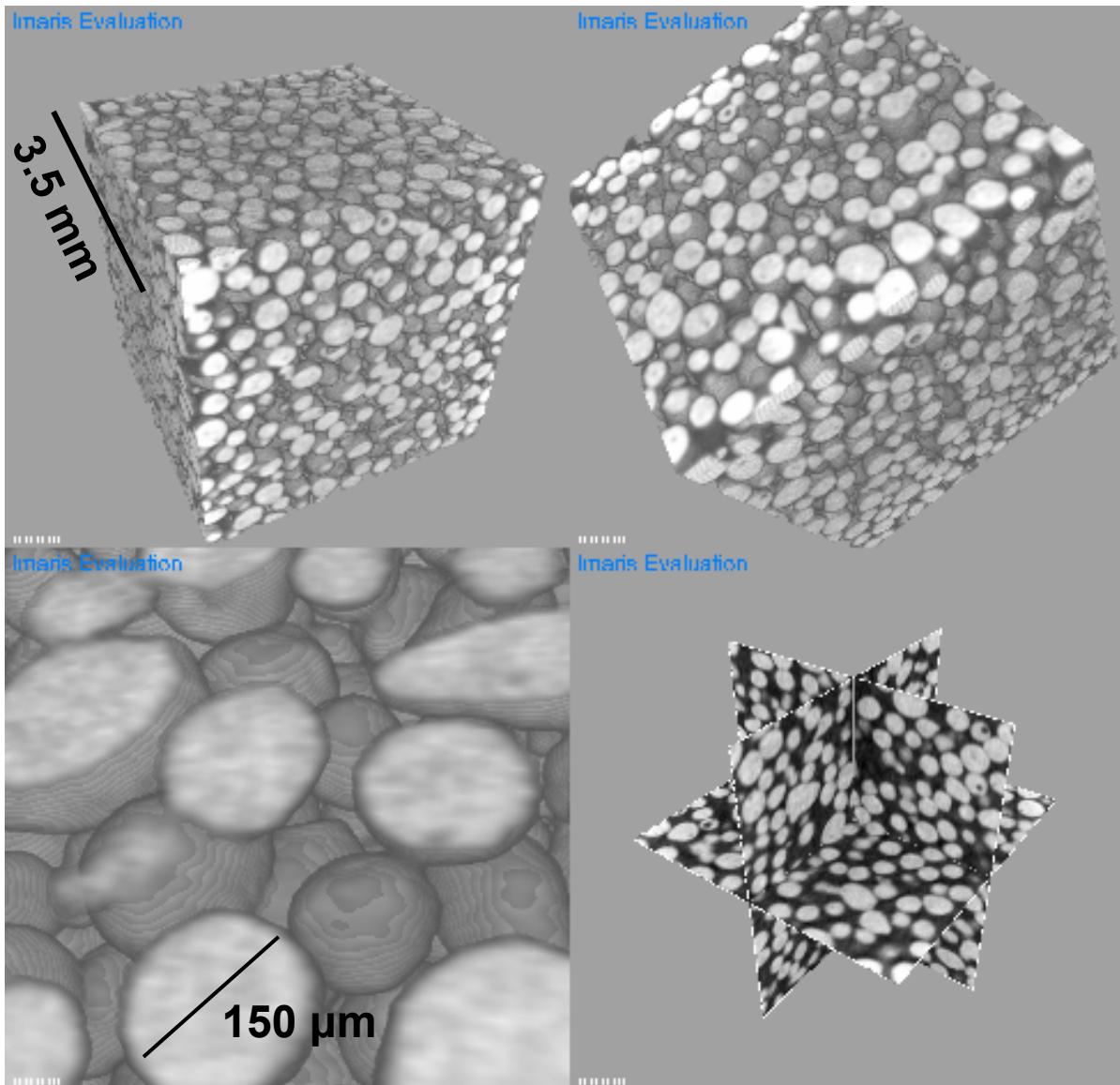
Volume renderings (top)

Surface rendering

Cu/acrylic 50 vol % of 100 to 200 μm Cu spheres



Cu/acrylic 50 vol % of 100 to 200 μm Cu spheres

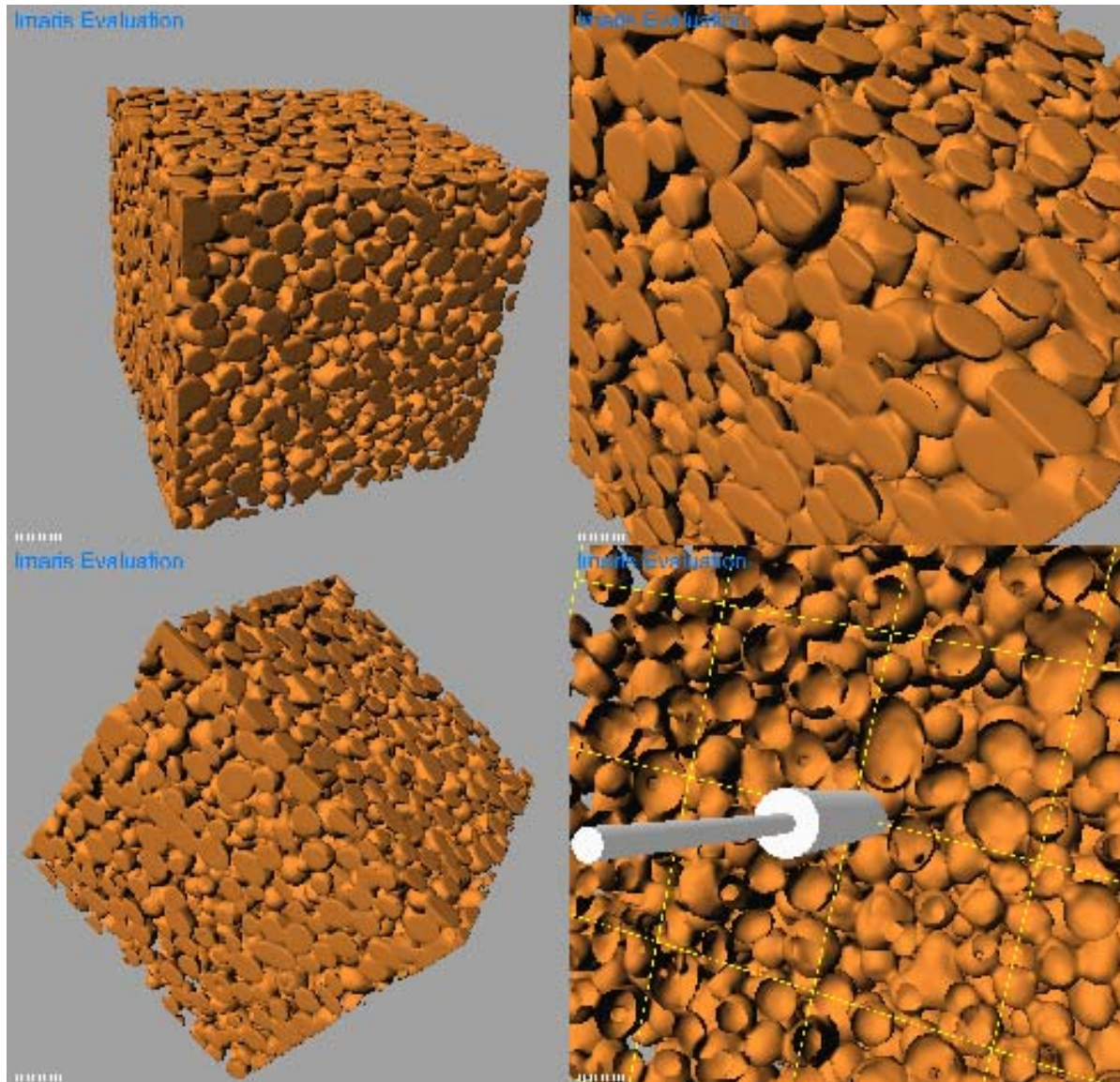


Dataset:

- $100^2 \times 350$ Voxels
- $10^3 \mu\text{m}^3$ Voxel size

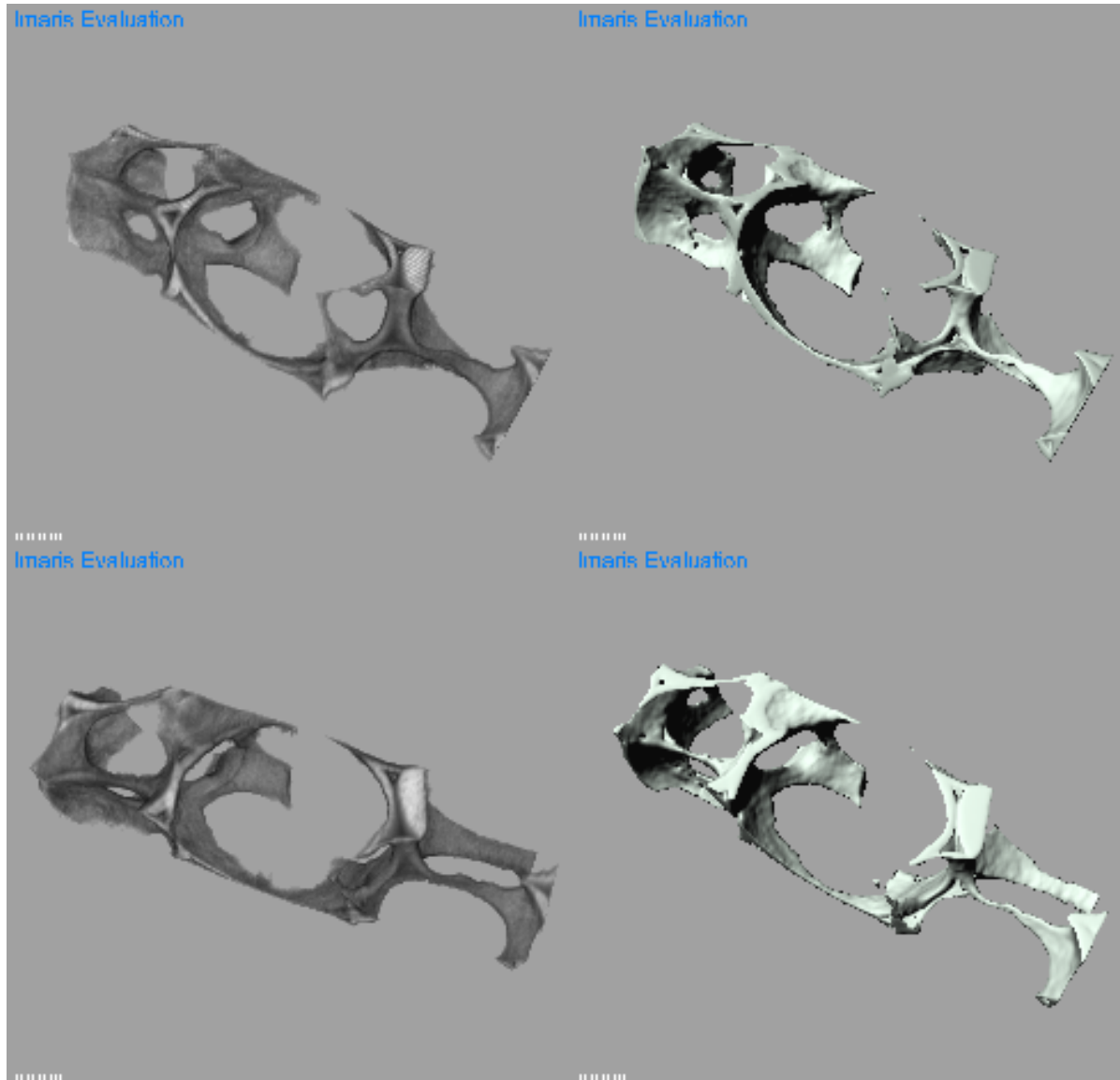
Volume renderings (top)
Volume rendering close up (bottom left) and orthogonal sections (bottom right)

Cu/acrylic 50 vol % of 100 to 200 μm Cu spheres



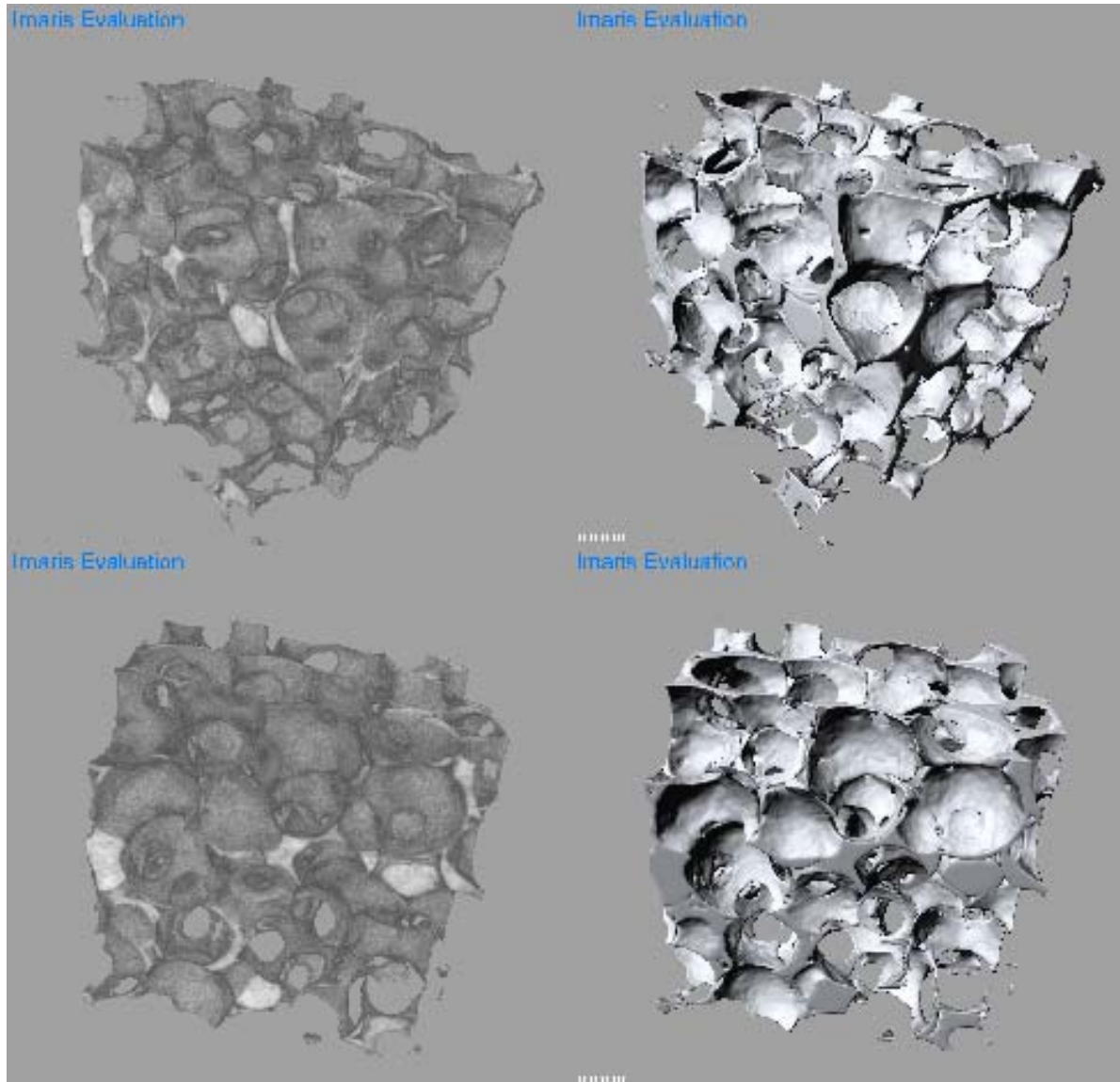
Surface renderings with colored surface to emphasize the material, i.e. Cu spheres, section through the rendered surface (bottom right)

AlNi foam



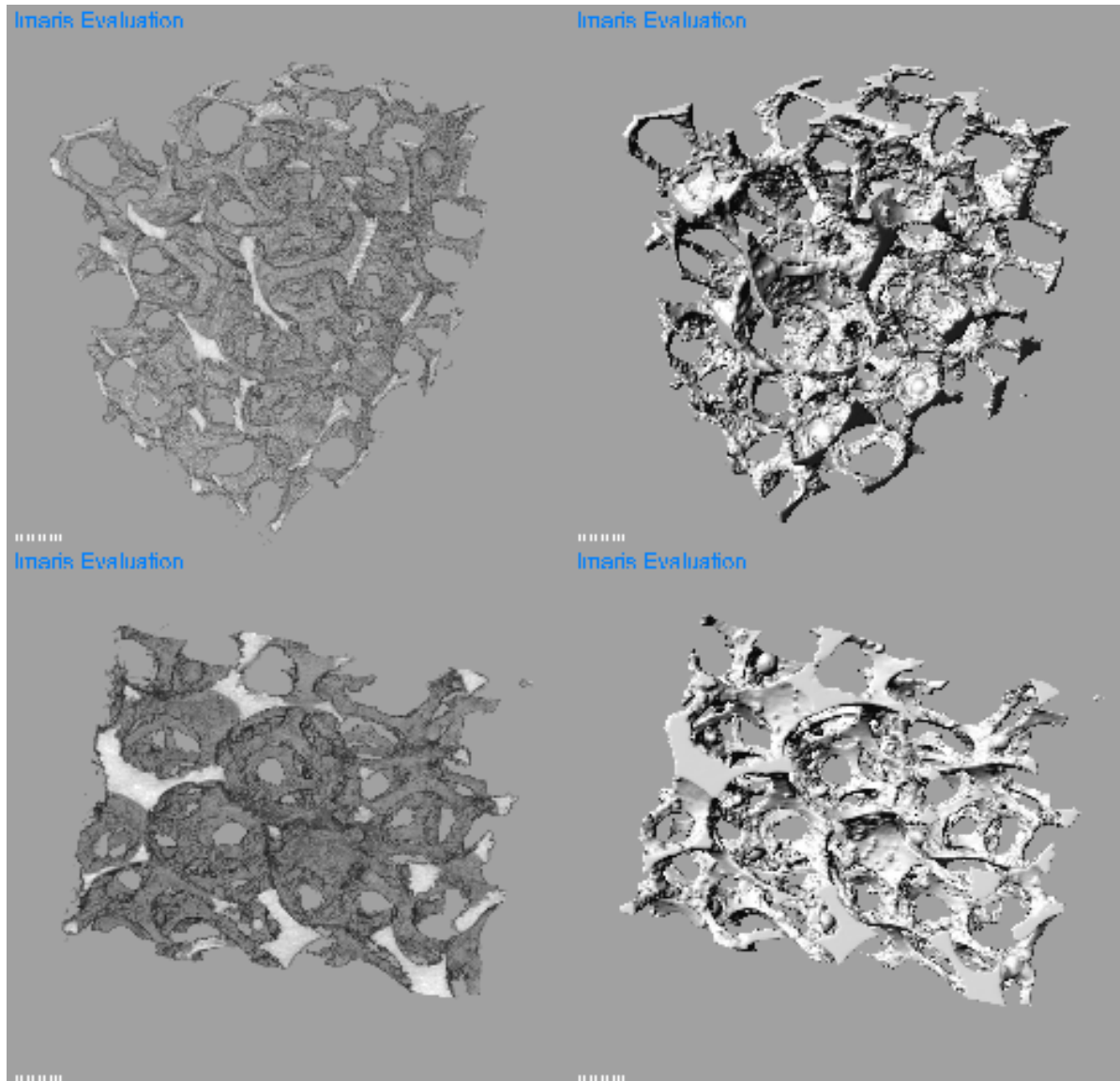
Volume and Surface rendering (left and right side respectively) from approximately the same view point

AlNi foam



Volume and Surface rendering (left and right side respectively) from approximately the same view point

AI foam



Volume and Surface rendering (left and right side respectively) from approximately the same view point

Acknowledgements

Peter Wyss

EMPA Dübendorf: CT scans

Niklaus Koch

D-MATL Werkstatt: Preparation of Cu/acrylic cylinders

Max Hausamman

D-PHYS Werkstatt: Preparation of Me-foam cylinders

