

## **Scanning Electron Microprobe selected images at different magnifications for textural analysis of LP pumice clasts**

Supplementary material 3 for:

## **A gas-slug model for basaltic Vulcanian eruptions at open conduit volcanoes, constrained by textural characteristics and dynamics of the July 3rd, 2019, Stromboli eruption (Italy)**

*\*G. Giordano<sup>1,2</sup>, A. Vona<sup>1</sup>, T.O. Grillo<sup>1</sup>, A. Frontoni<sup>1,2</sup>, L. Calabrò<sup>3</sup>, G. Carrasco-Núñez<sup>4</sup>, A. Aiuppa<sup>5</sup>, L. Caricchi<sup>6</sup>, G. De Astis<sup>7</sup>, D. Di Genova<sup>3</sup>, G. La Spina<sup>8</sup>, M. Piochi<sup>9</sup>, M. Viccaro<sup>10</sup>, R. Russo<sup>1</sup>*

<sup>1</sup> Dipartimento di Scienze – Scienze Geologiche, Università Roma Tre, Largo San Leonardo Murialdo 1, 00146, Rome, Italy

<sup>2</sup> Istituto di Geologia Ambientale e Geoingegneria del Consiglio Nazionale delle Ricerche, Montelibretti, Italy

<sup>3</sup> Istituto di Scienza, Tecnologia e Sostenibilità per lo sviluppo dei Materiali Ceramici, Consiglio Nazionale delle Ricerche, Via Granarolo, 64, 48018 Faenza RA

<sup>4</sup> Instituto de Geociencias, Universidad Nacional Autónoma de México, Campus UNAM Juriquilla, 76100, Querétaro, Mexico

<sup>5</sup> Dipartimento di Scienze della Terra e del Mare, Università di Palermo, Palermo, Italy.

<sup>6</sup> Department of Earth Sciences, University of Geneva, Geneva, Switzerland

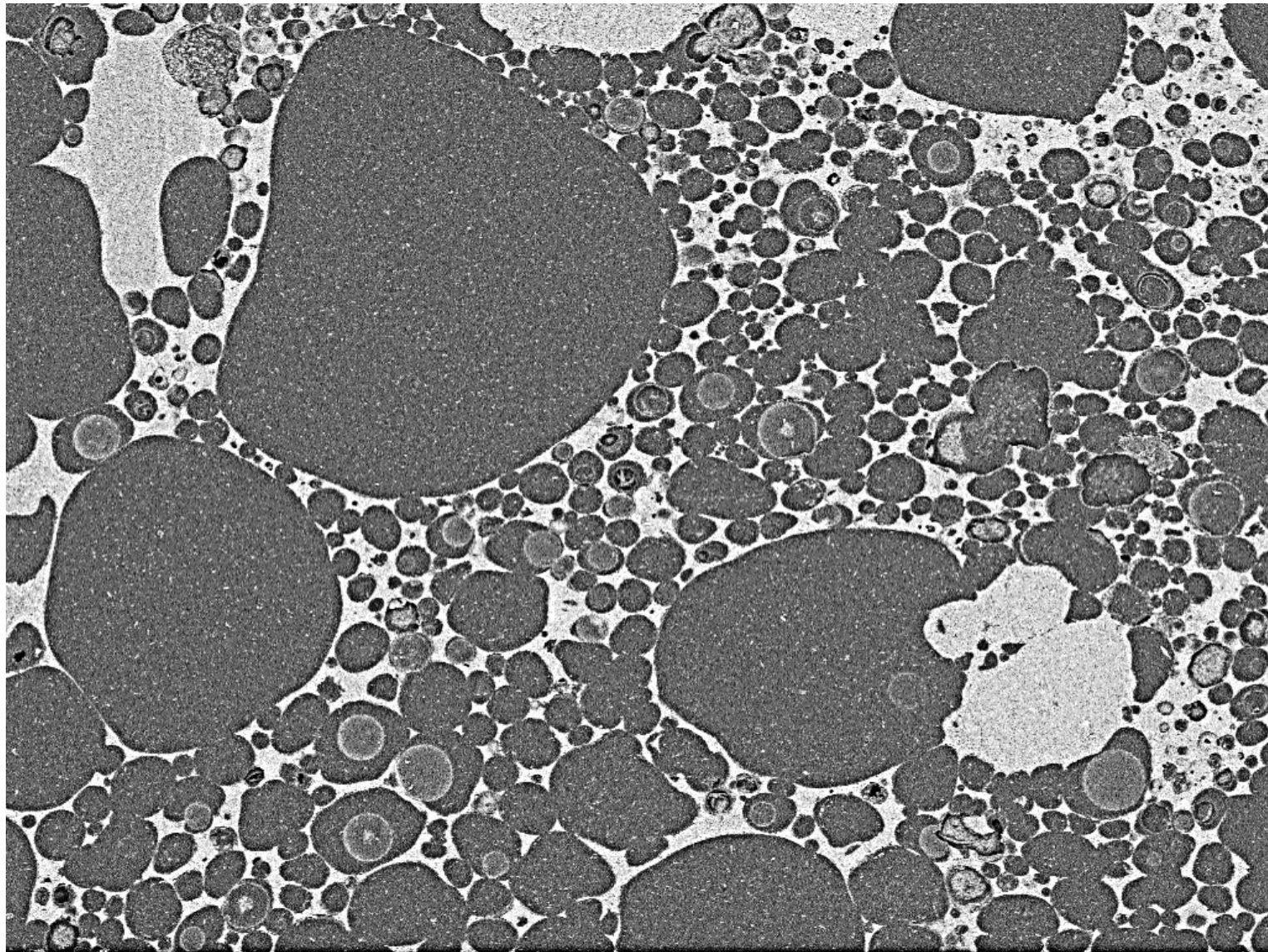
<sup>7</sup> Istituto Nazionale di Geofisica e Vulcanologia, Via di Vigna Murata 605, 00143, Rome, Italy

<sup>8</sup> Istituto Nazionale di Geofisica e Vulcanologia- Sezione di Catania, Italy

<sup>9</sup> Istituto Nazionale di Geofisica e Vulcanologia – Osservatorio Vesuviano, Napoli, Italy

<sup>10</sup> Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Università degli Studi di Catania, Corso Italia 57, 95129 Catania, Italy

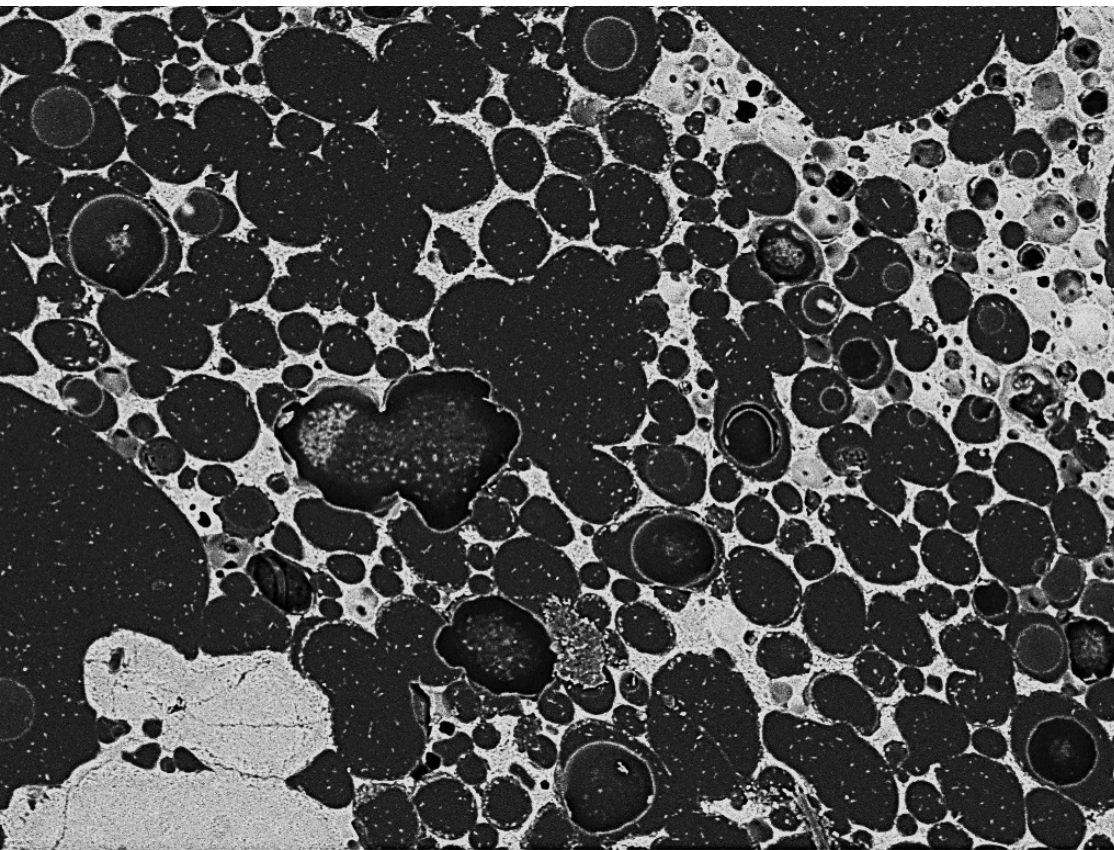
Sample GIN1-8, 60X



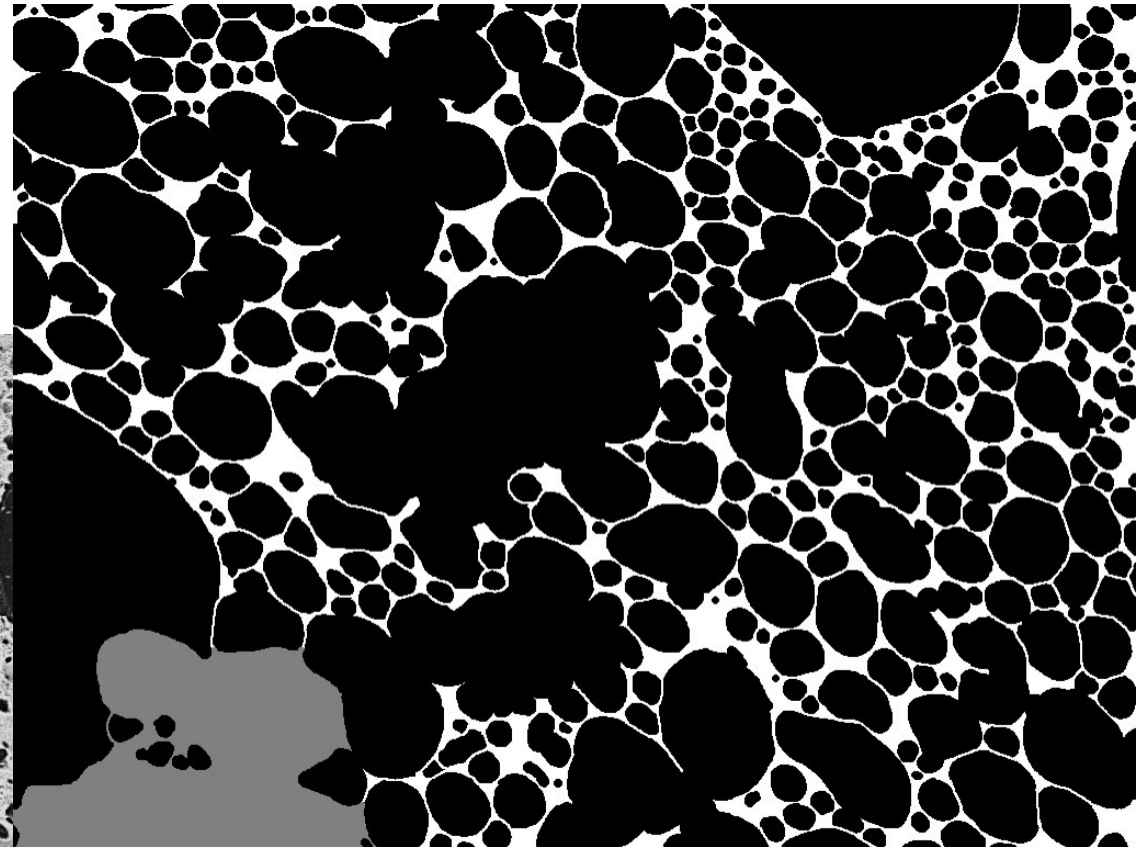
1 mm



Sample GIN1-8 120X (1)

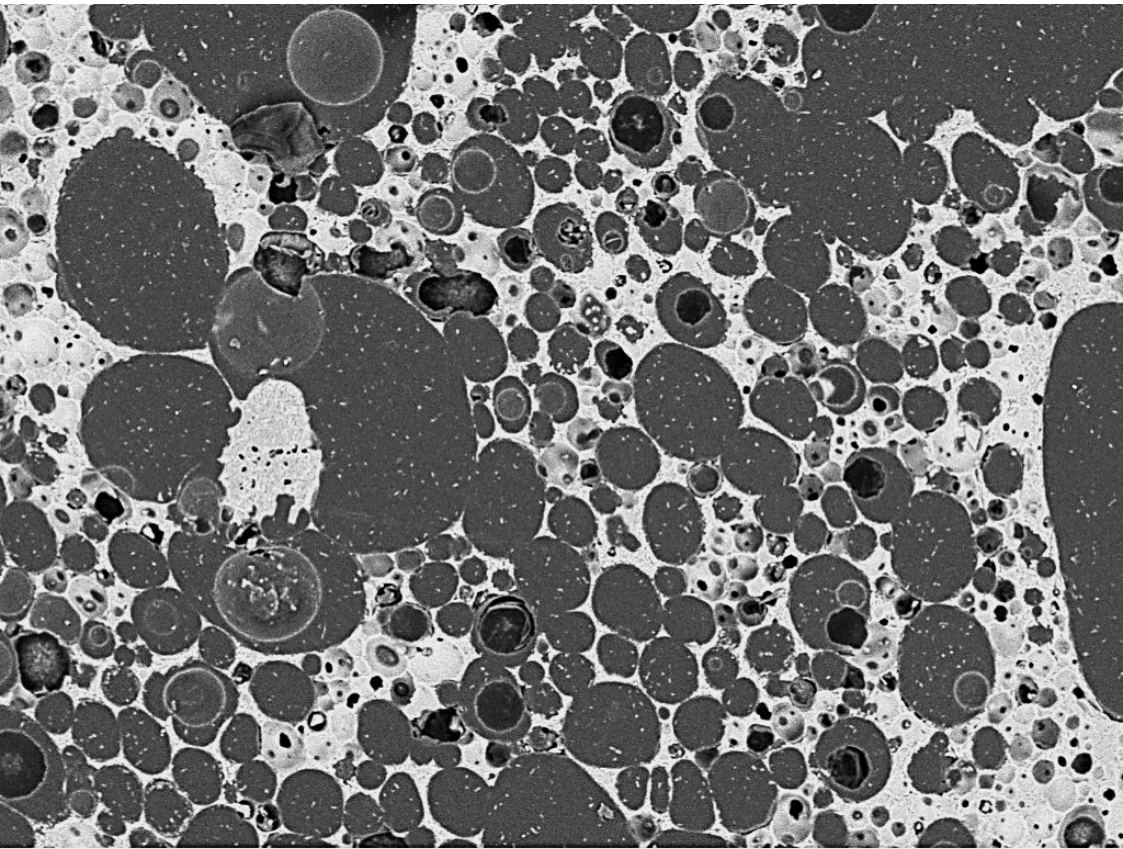


1 mm

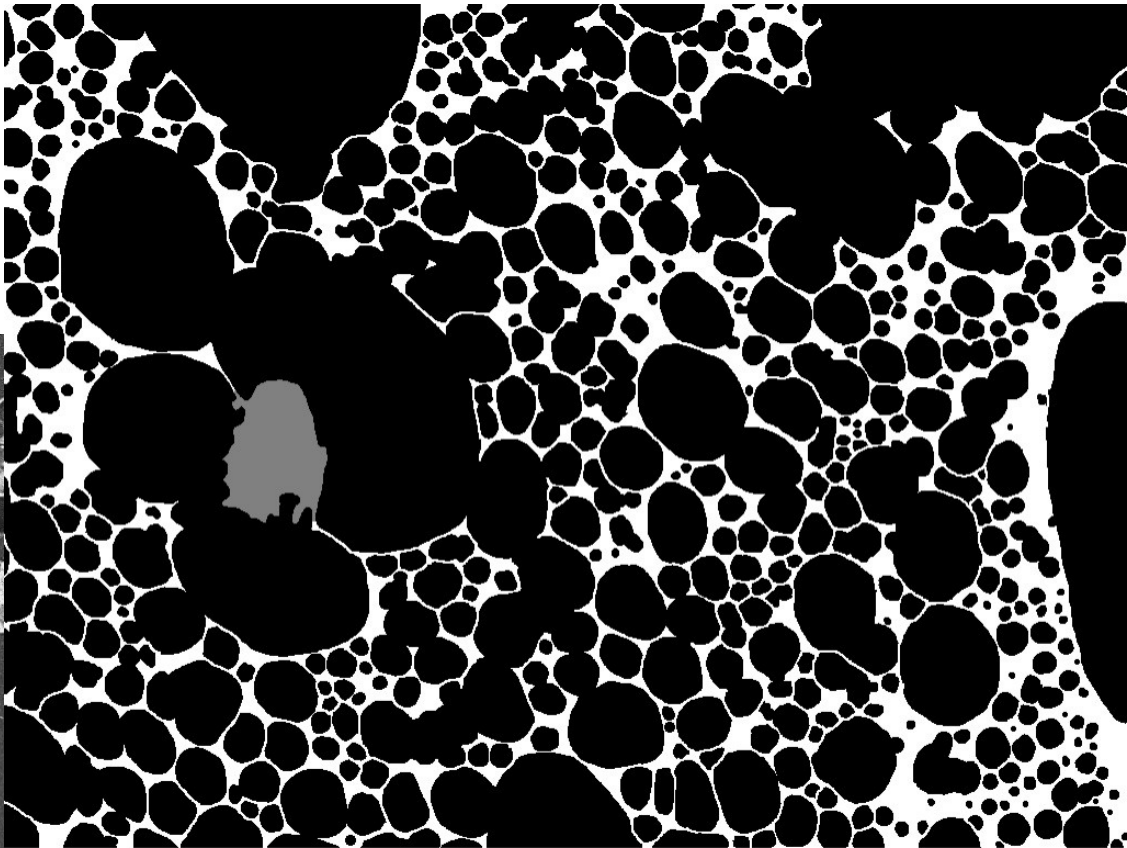


1 mm

Sample GIN1-8 120X (2)



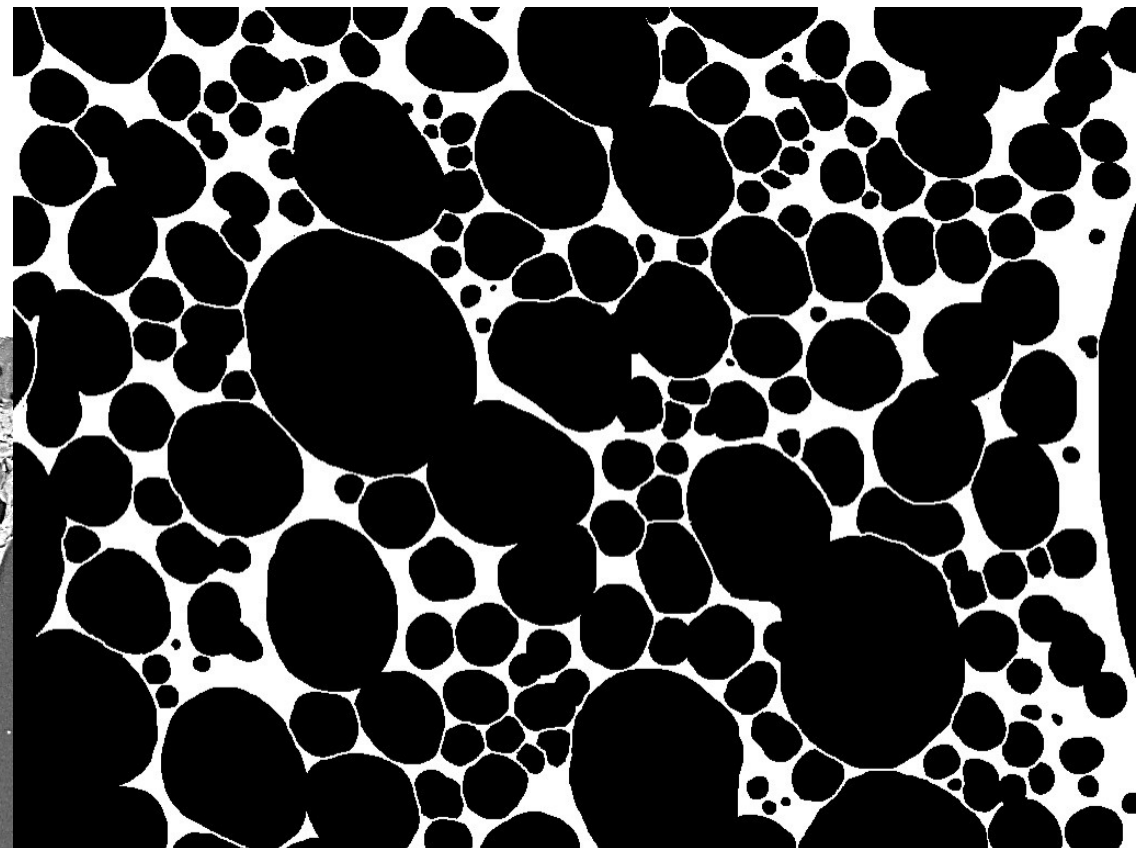
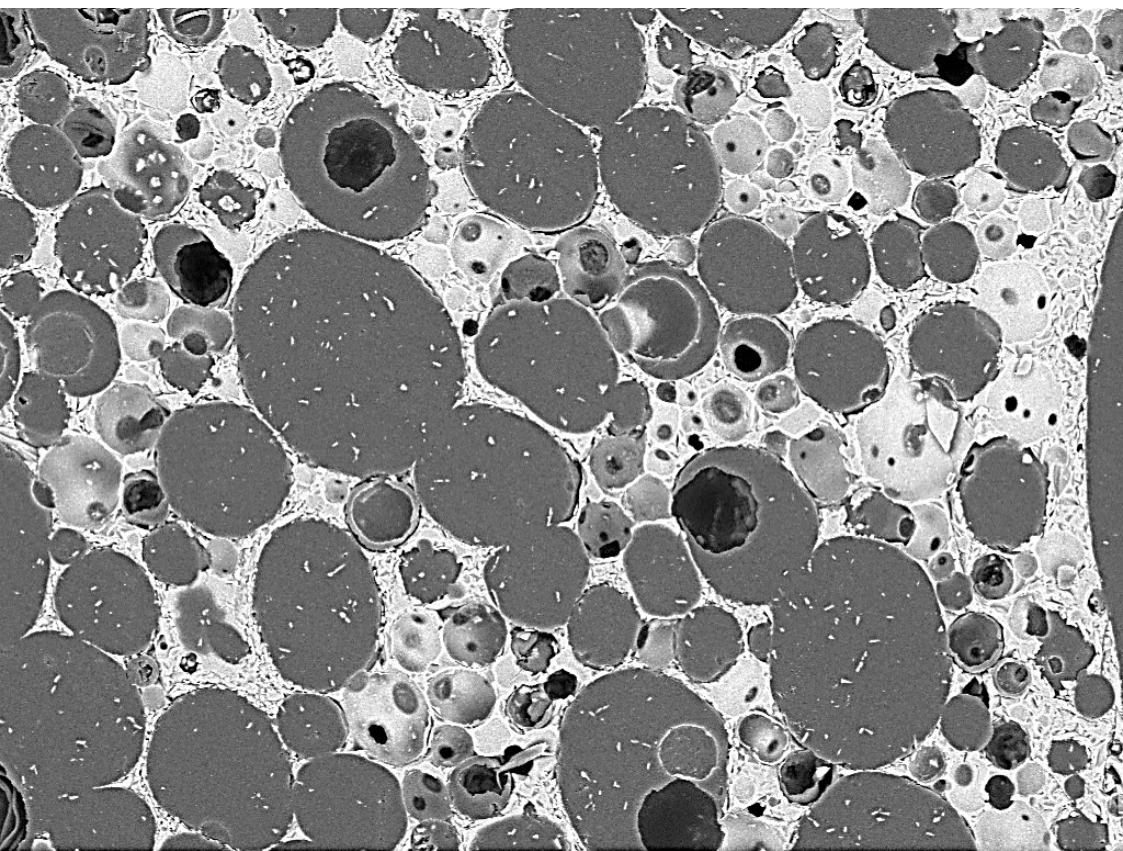
1 mm



1 mm



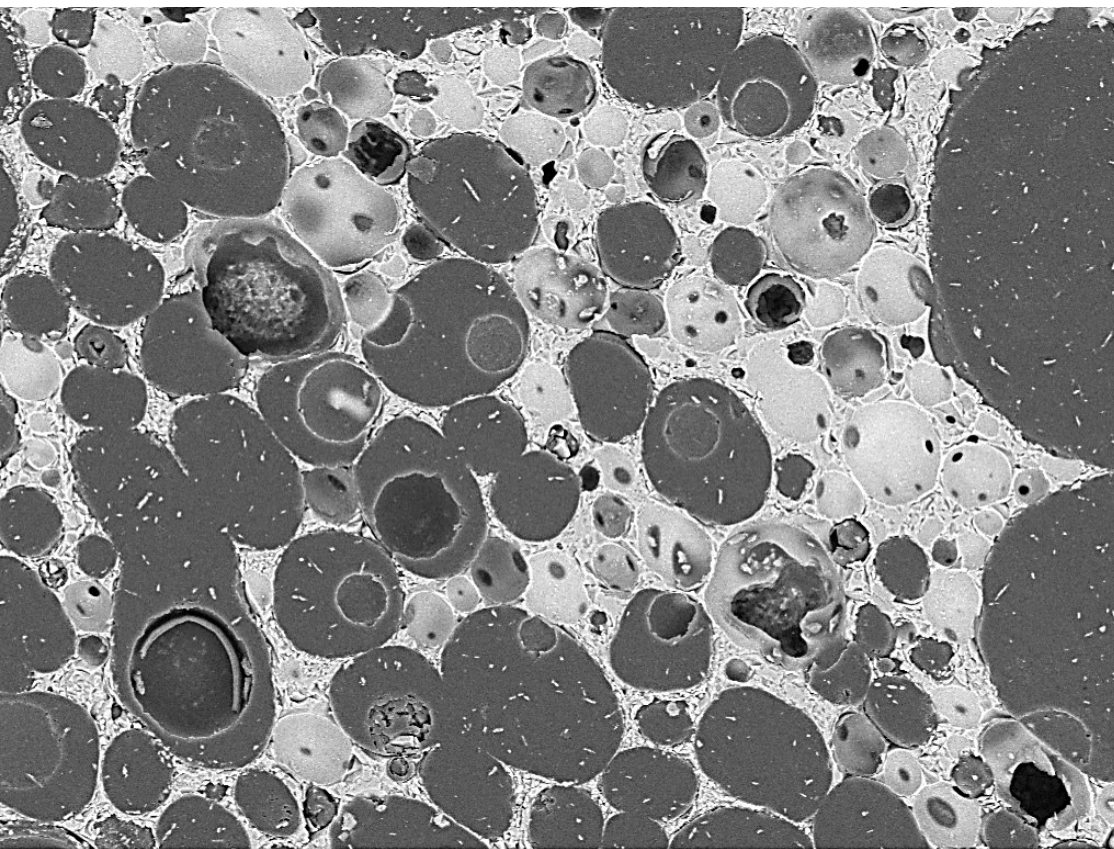
Sample GIN1-8 240X (1)



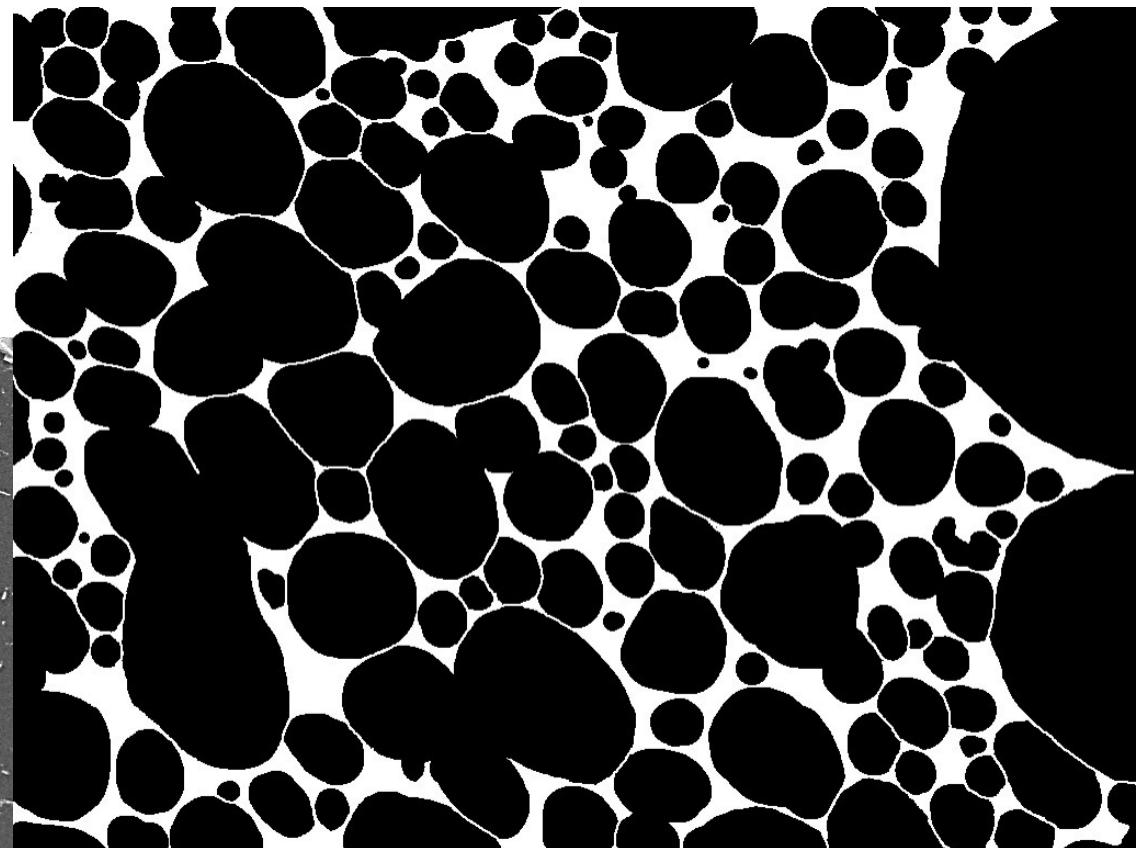
0.5 mm

0.5 mm

Sample GIN1-8 240X (2)

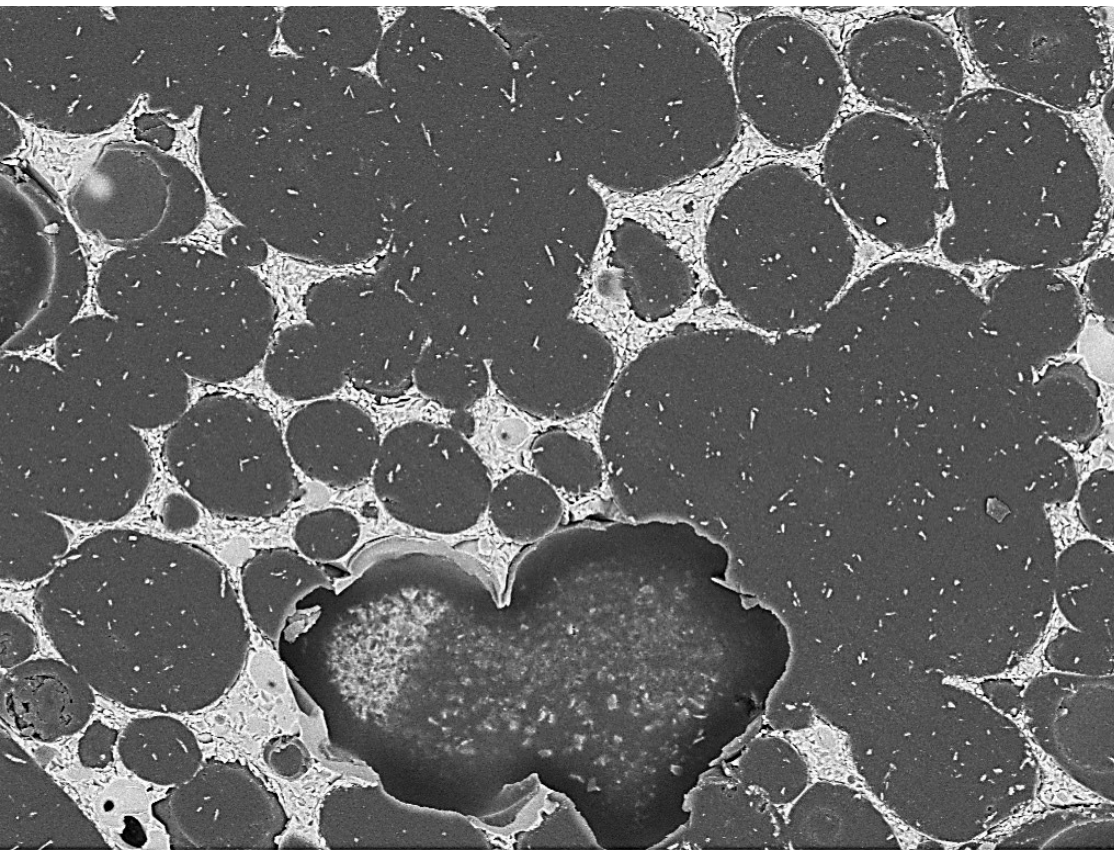


0.5 mm

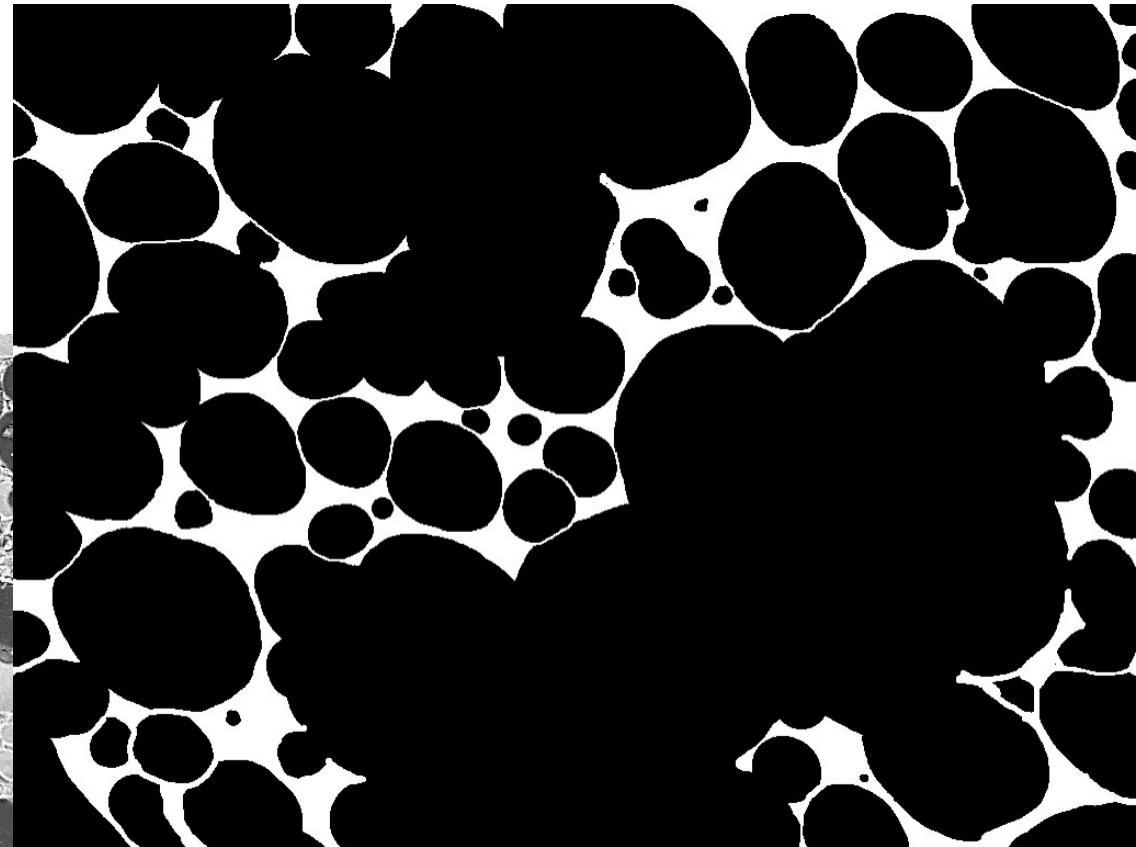


0.5 mm

Sample GIN1-8 240X (3)

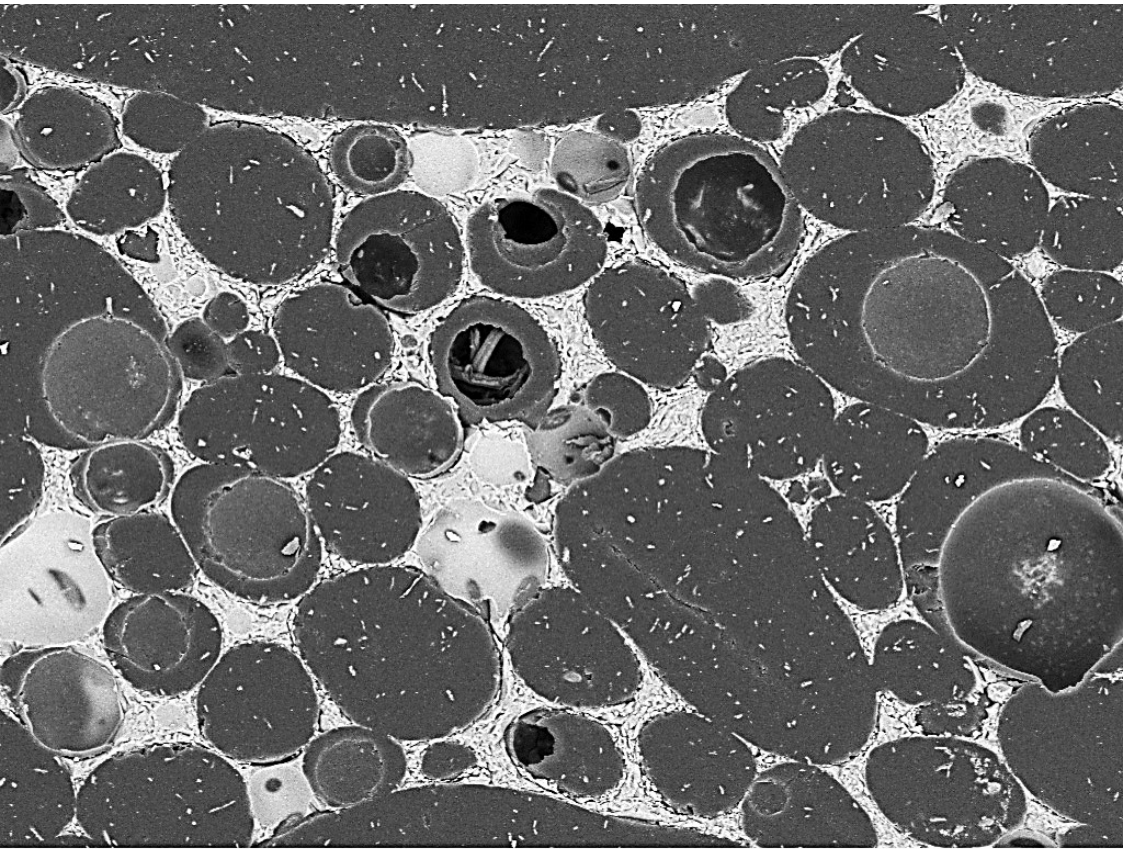


0.5 mm

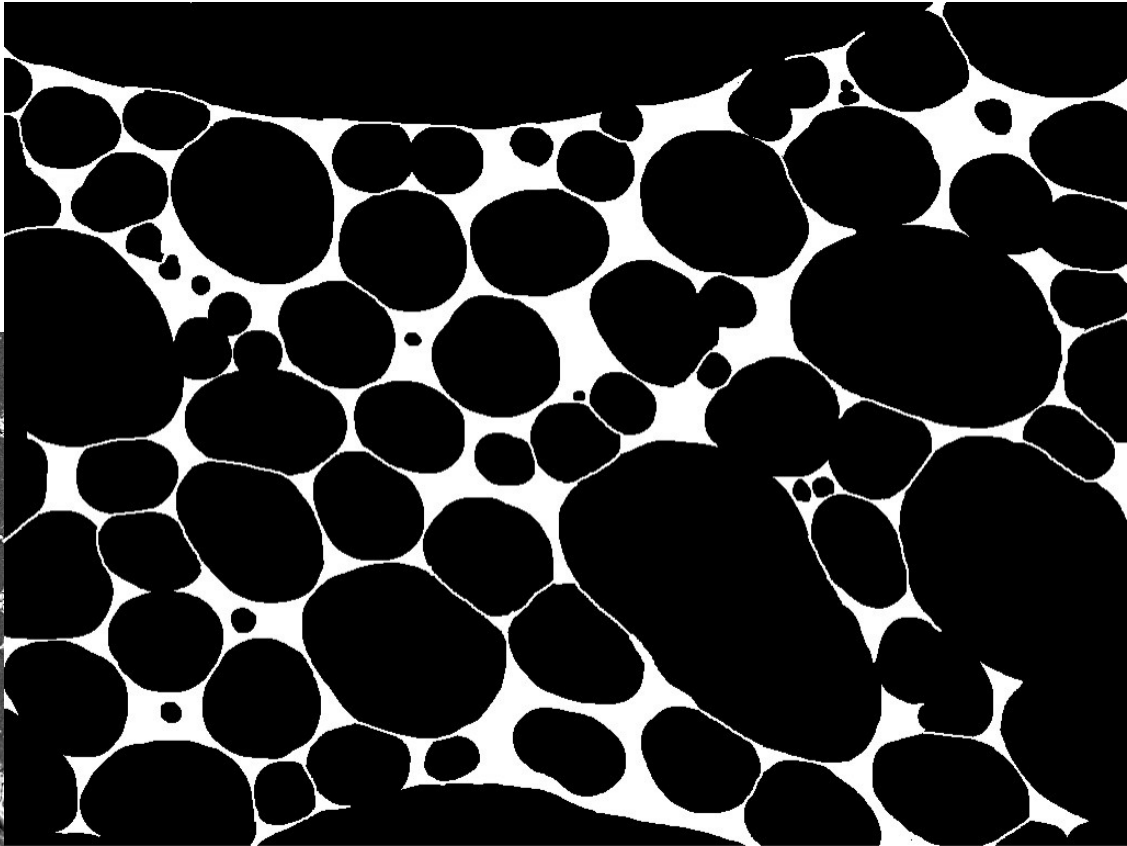


0.5 mm

Sample GIN1-8 240X (4)



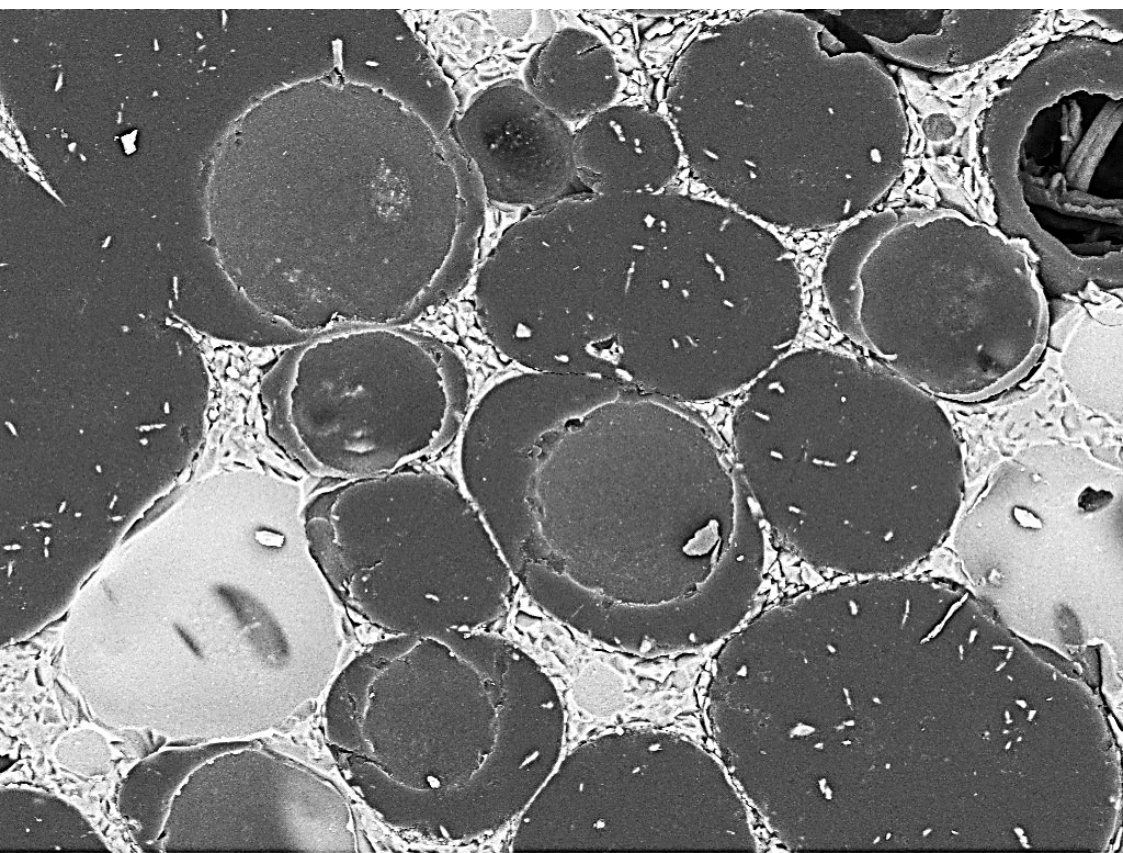
0.5 mm



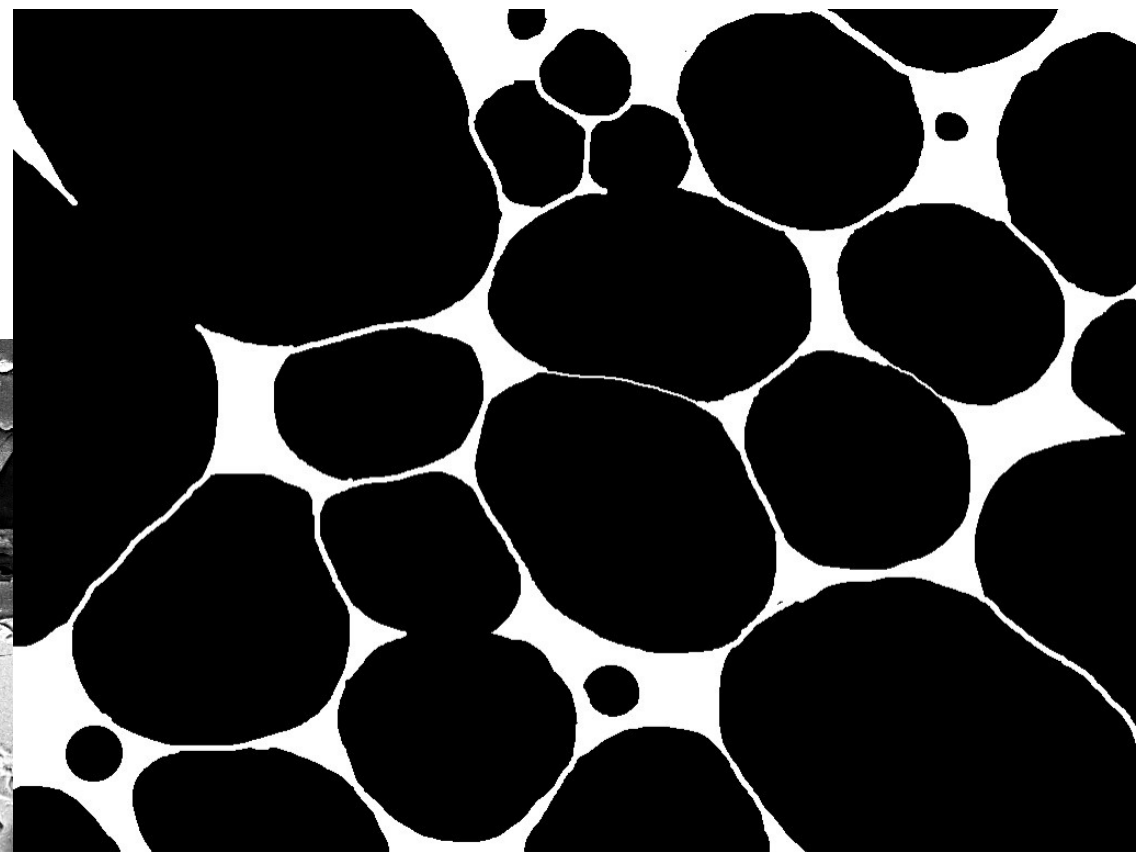
0.5 mm



Sample GIN1-8 480X (1)

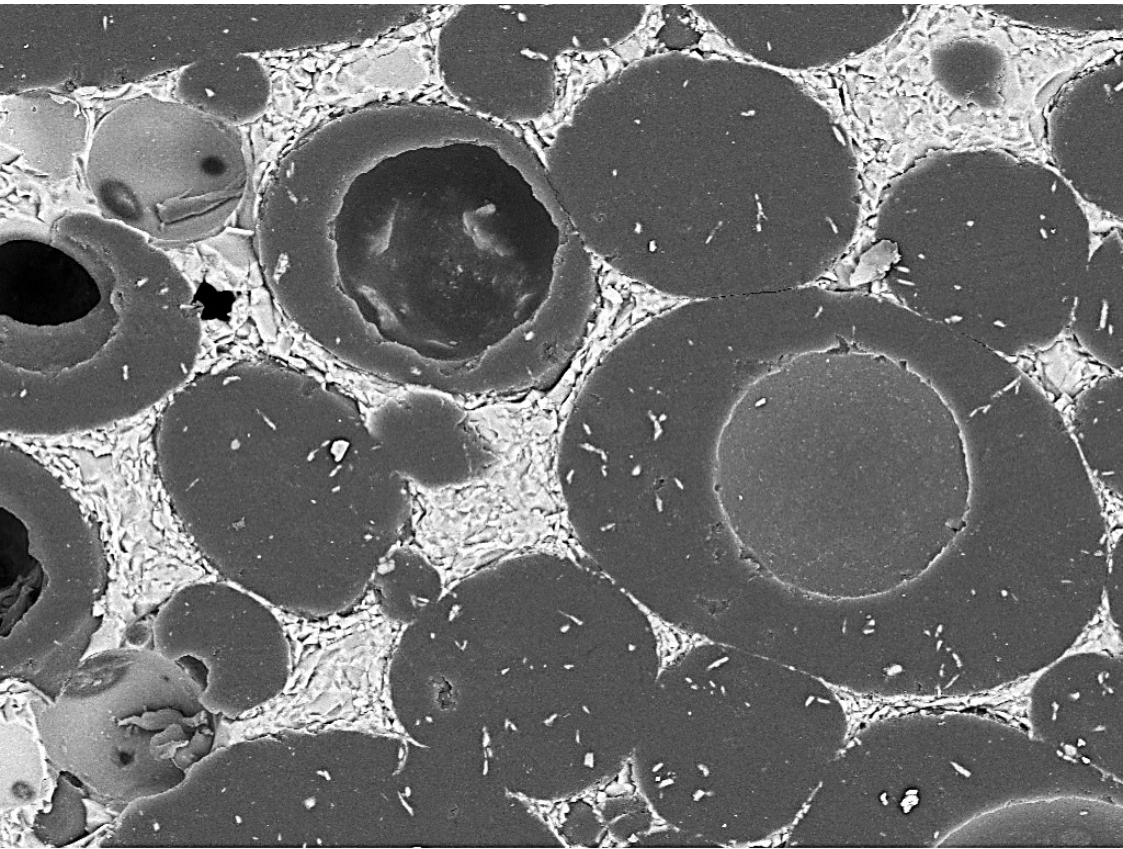


0.5 mm

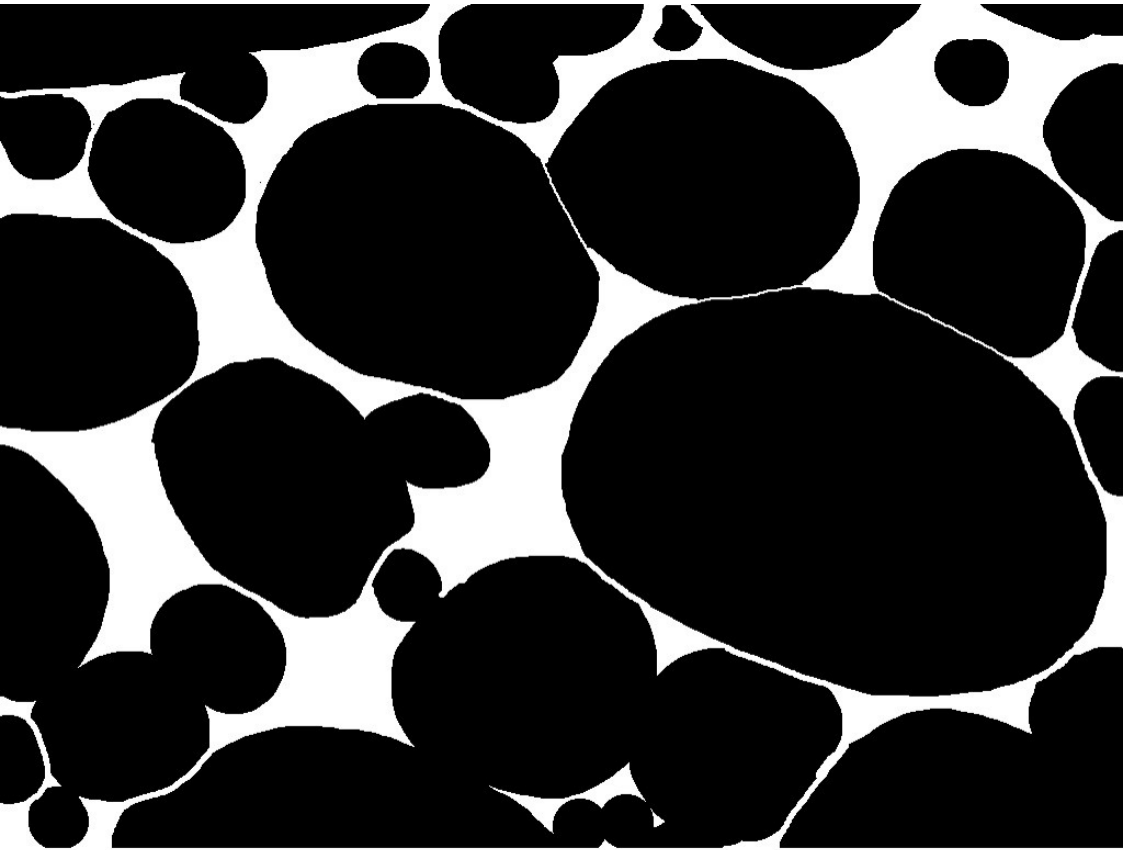


0.5 mm

Sample GIN1-8 480X (2)

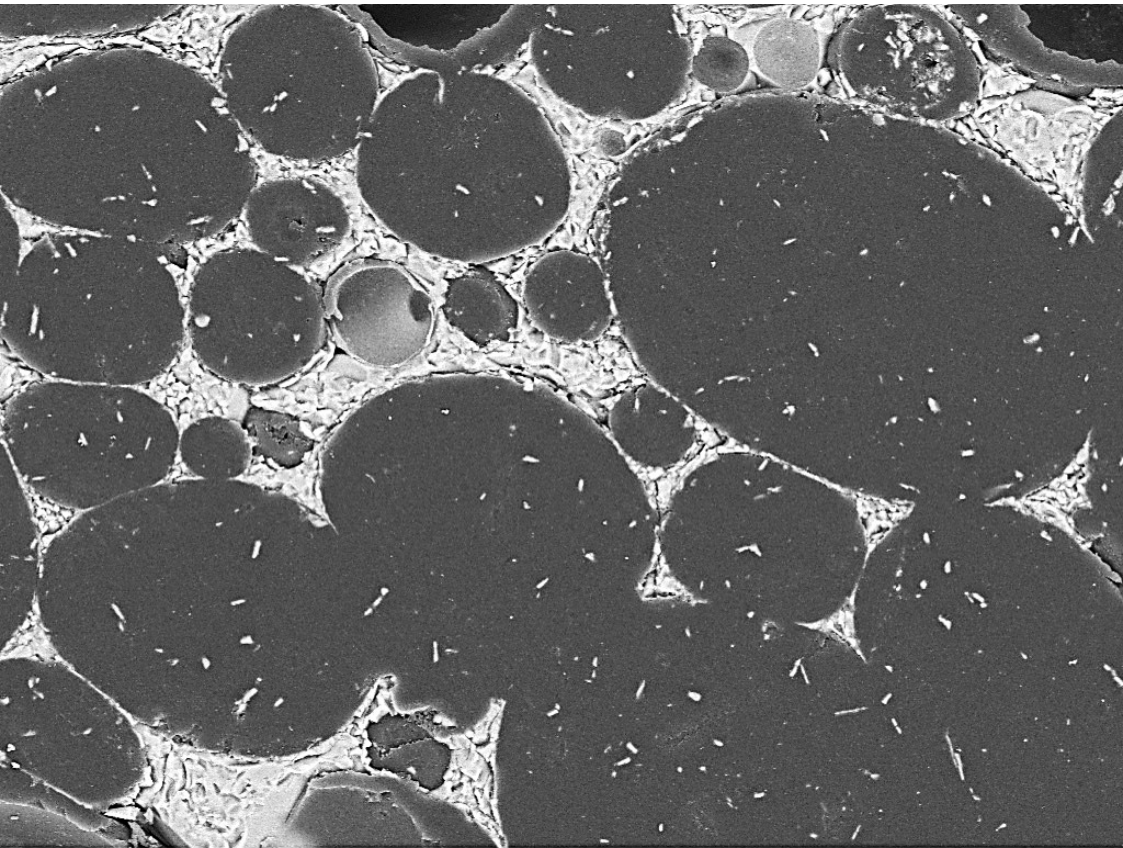


0.5 mm

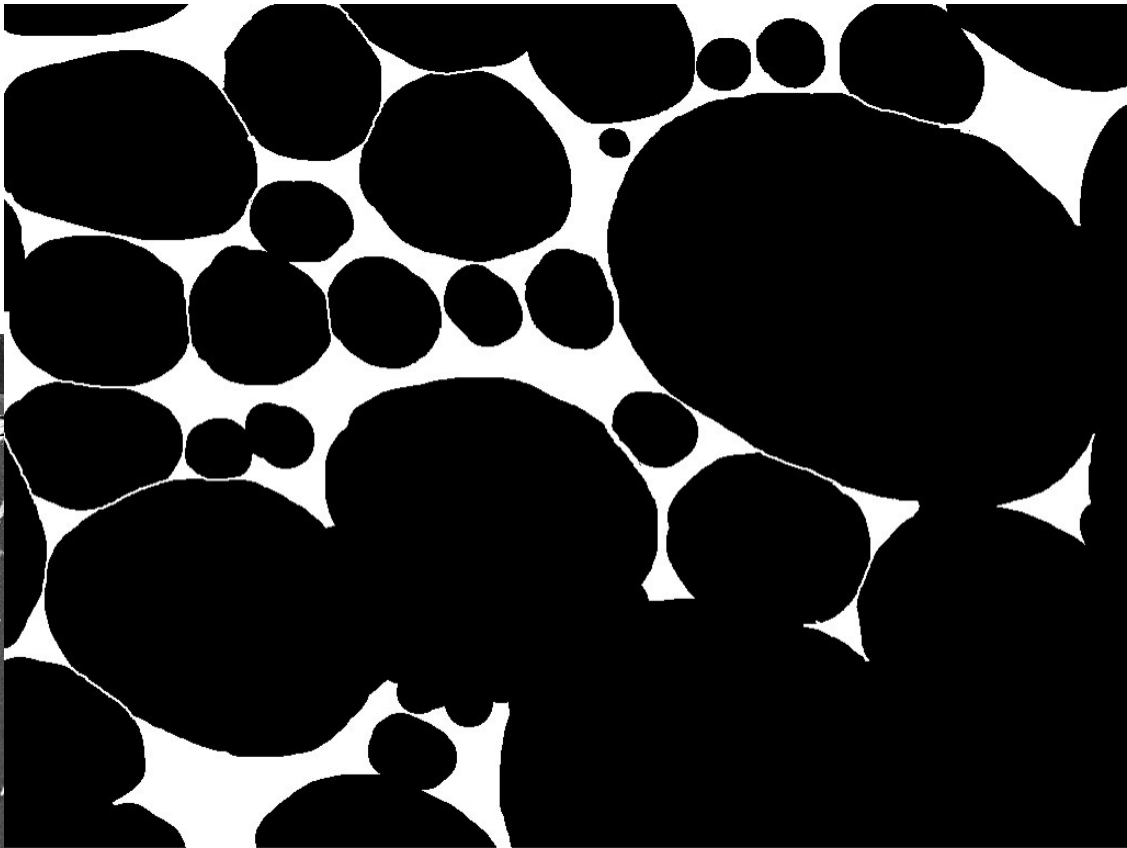


0.5 mm

Sample GIN1-8 480X (3)

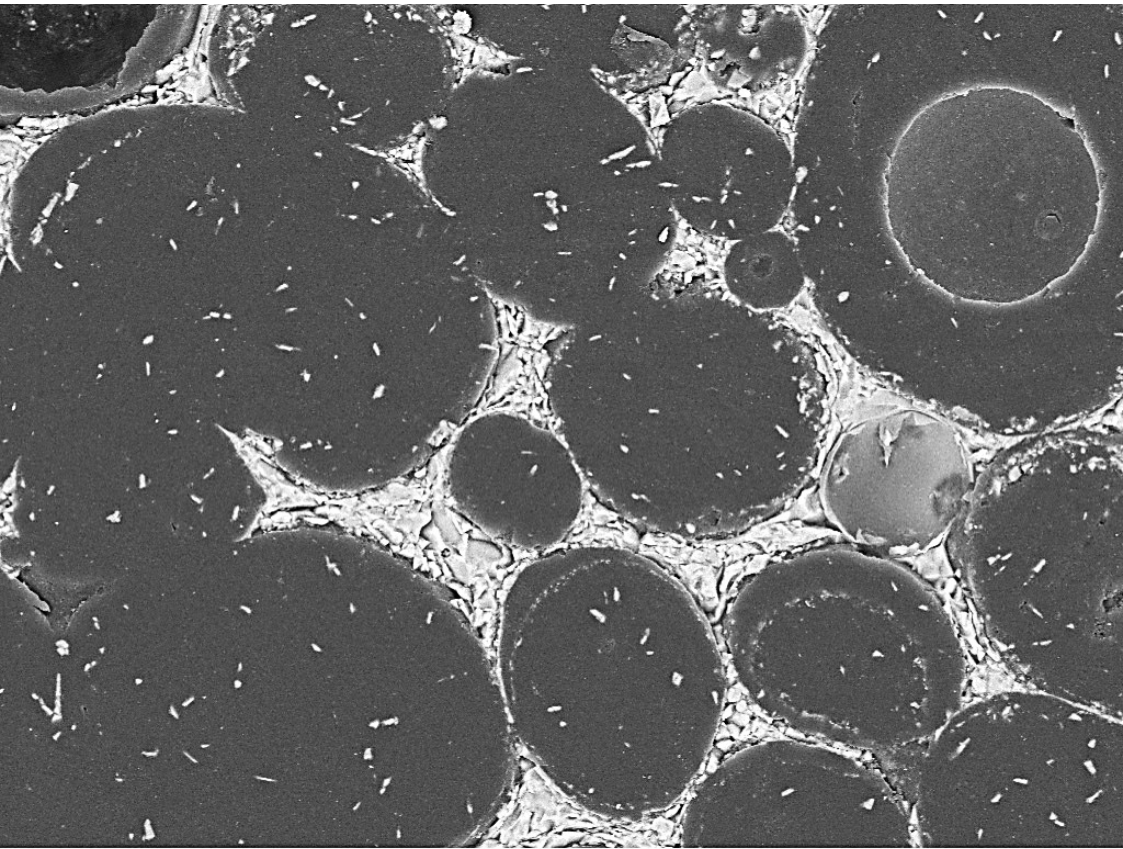


0.5 mm

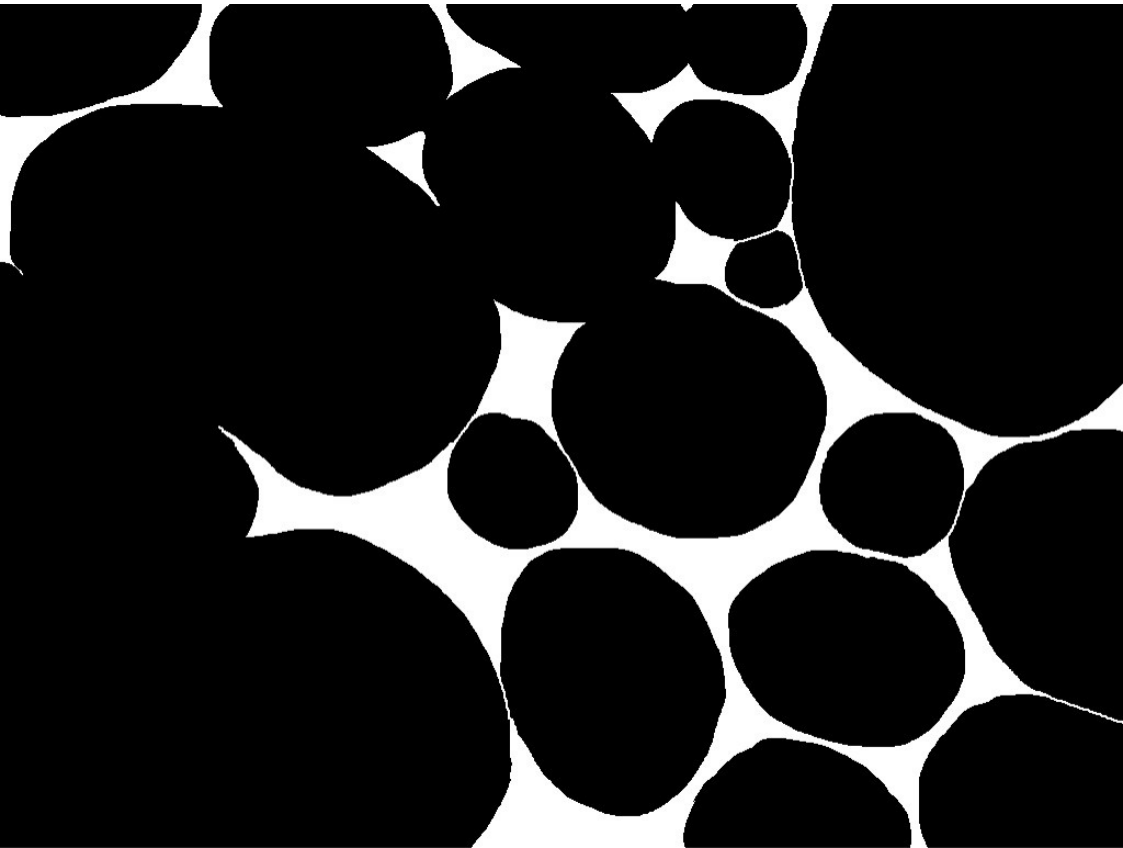


0.5 mm

Sample GIN1-8 480X (4)



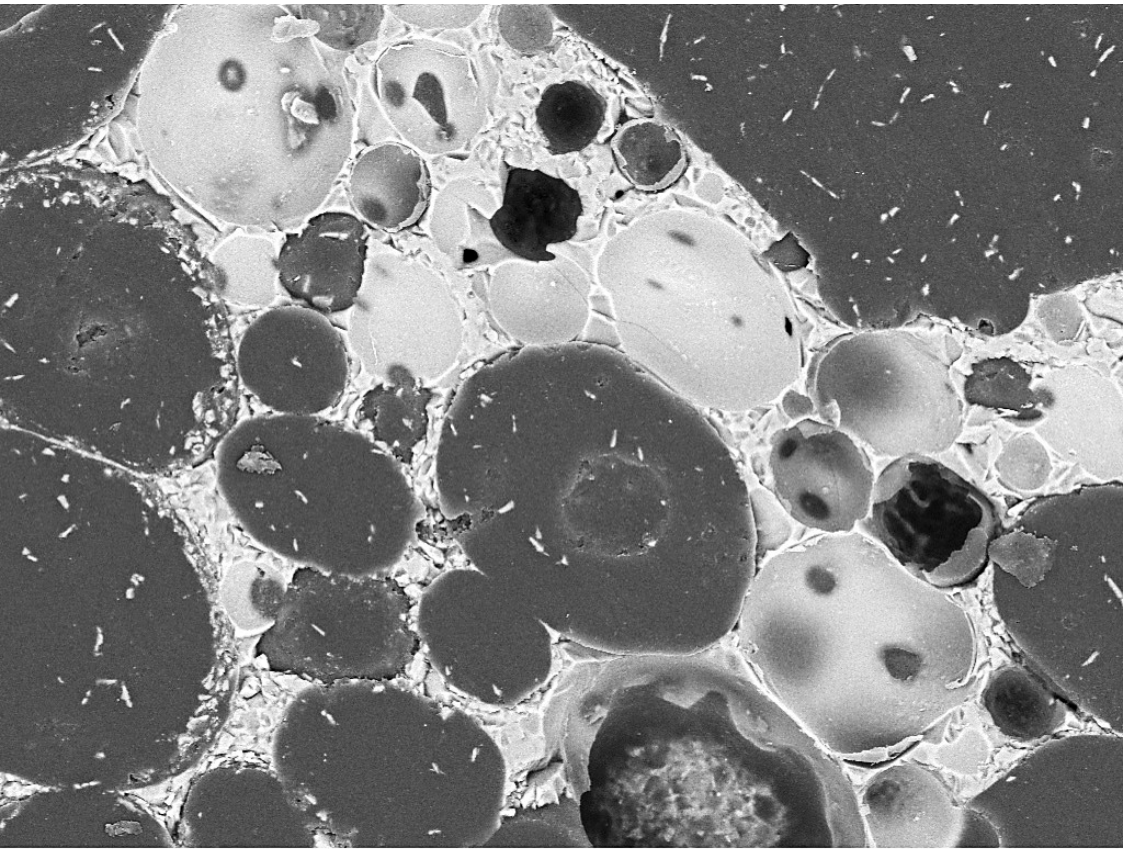
0.5 mm



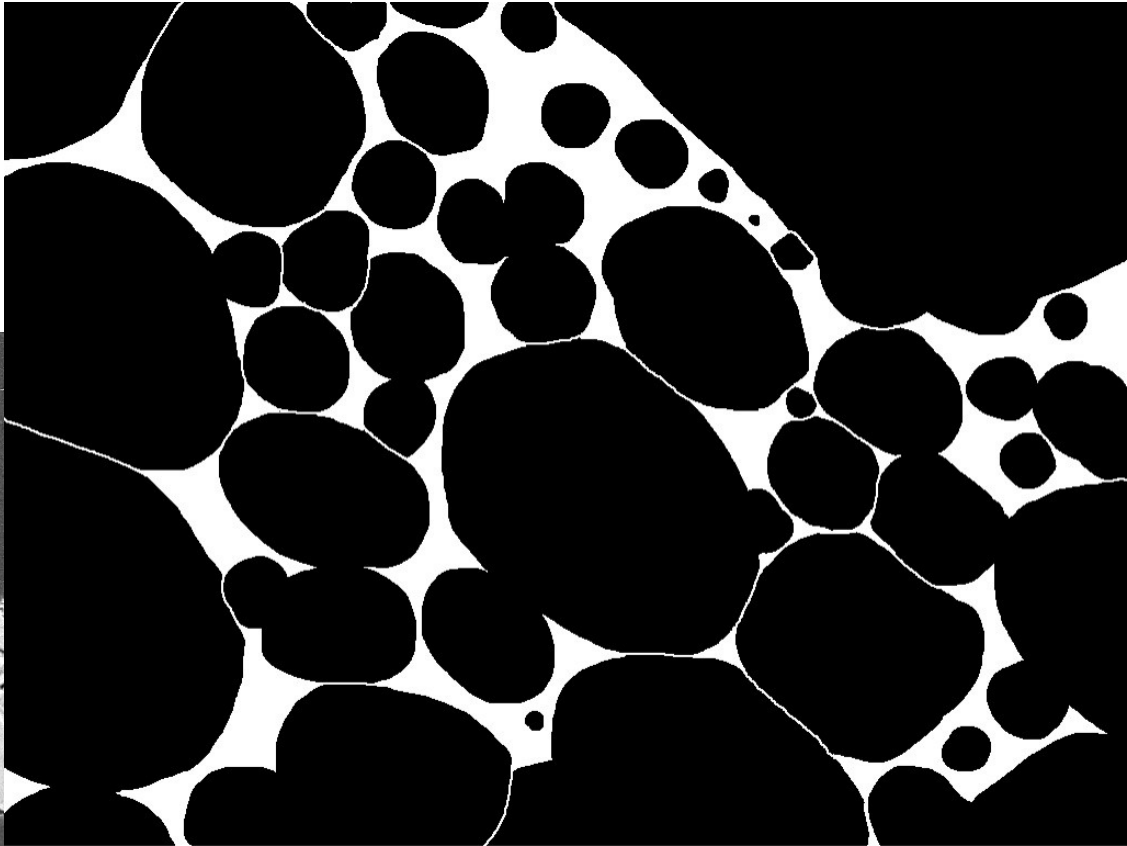
0.5 mm



Sample GIN1-8 480X (5)

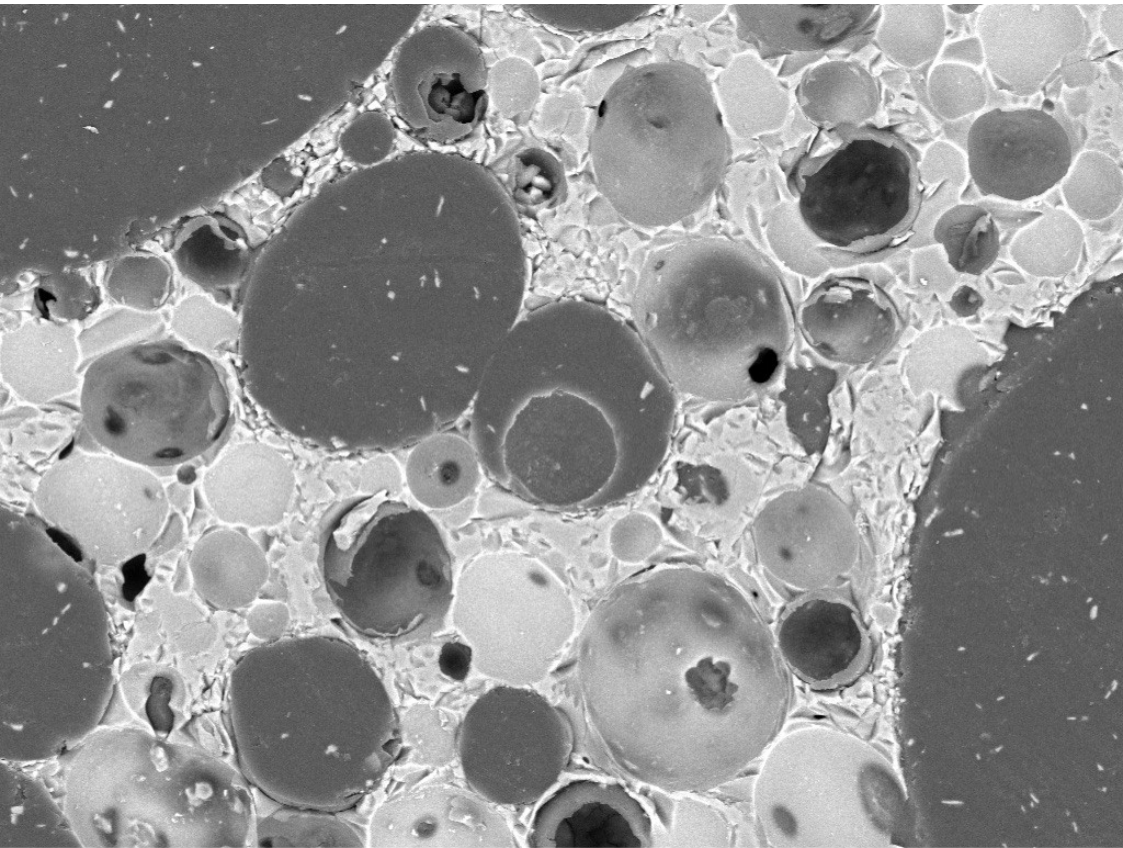


0.5 mm

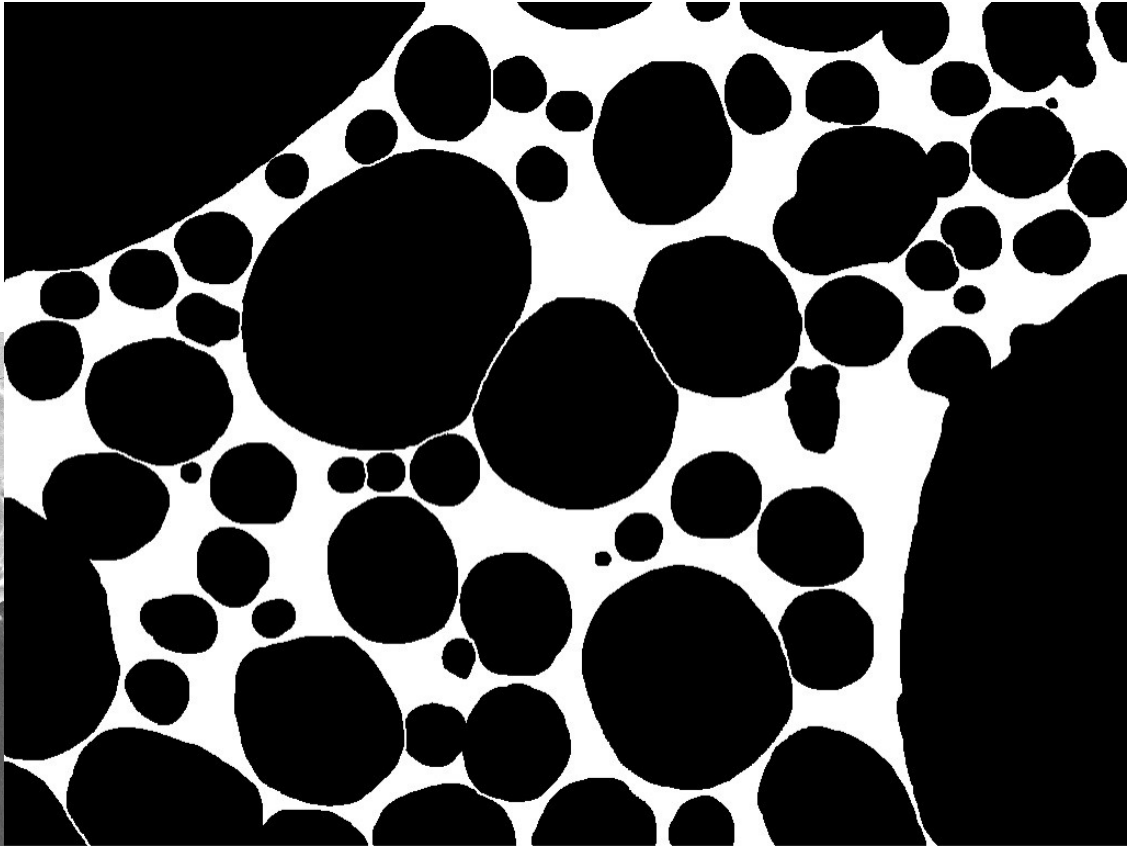


0.5 mm

Sample GIN1-8 480X (6)

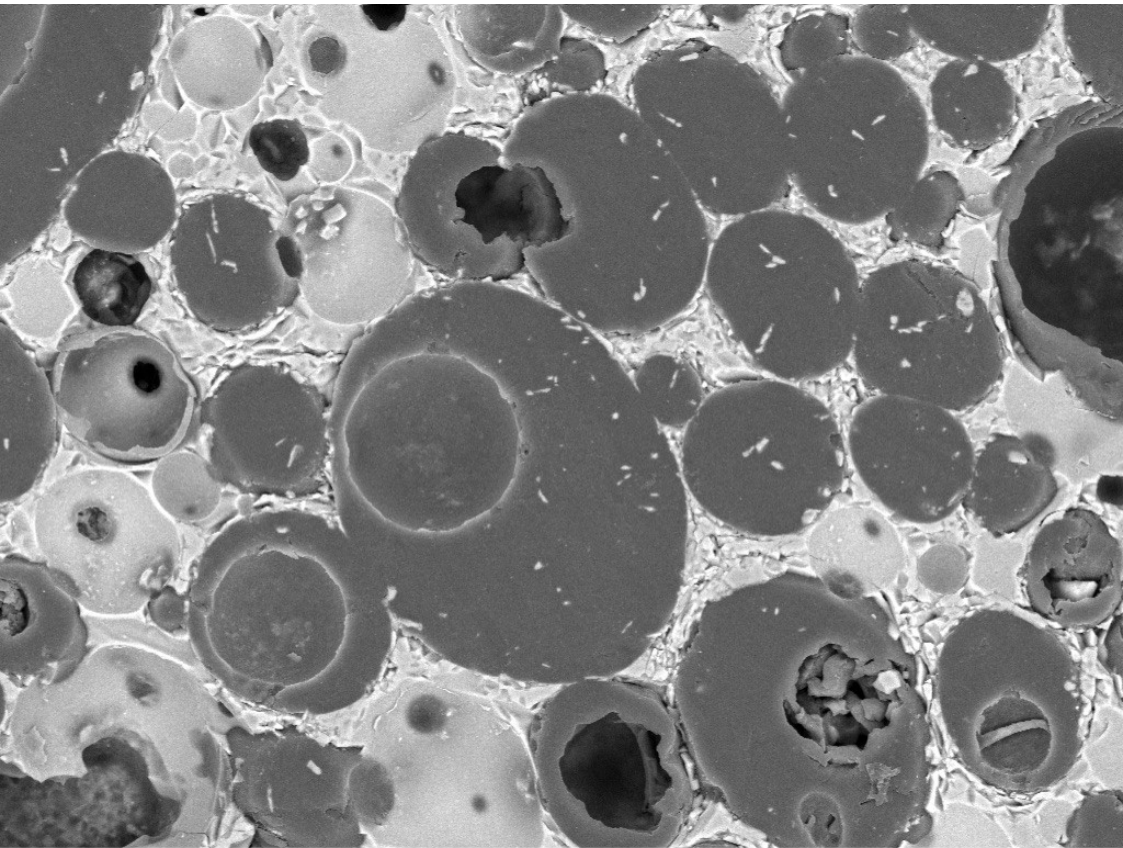


0.5 mm

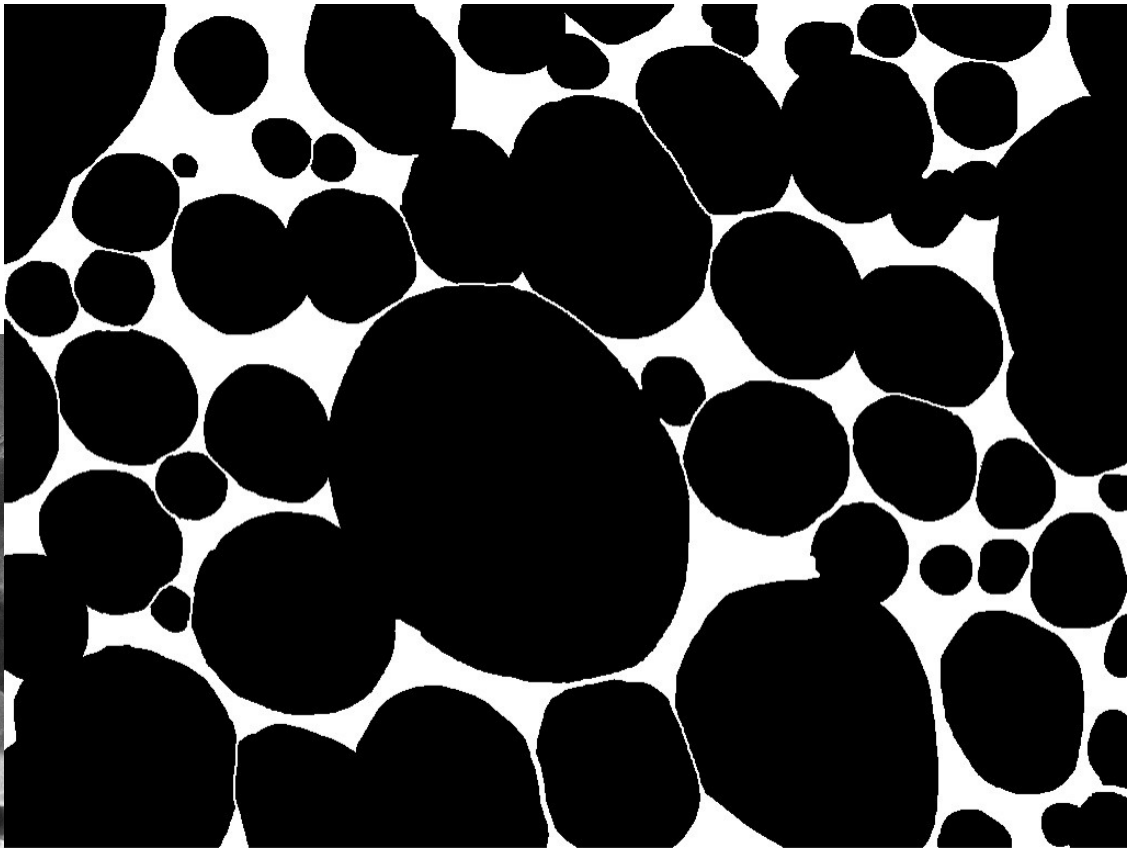


0.5 mm

Sample GIN1-8 480X (7)

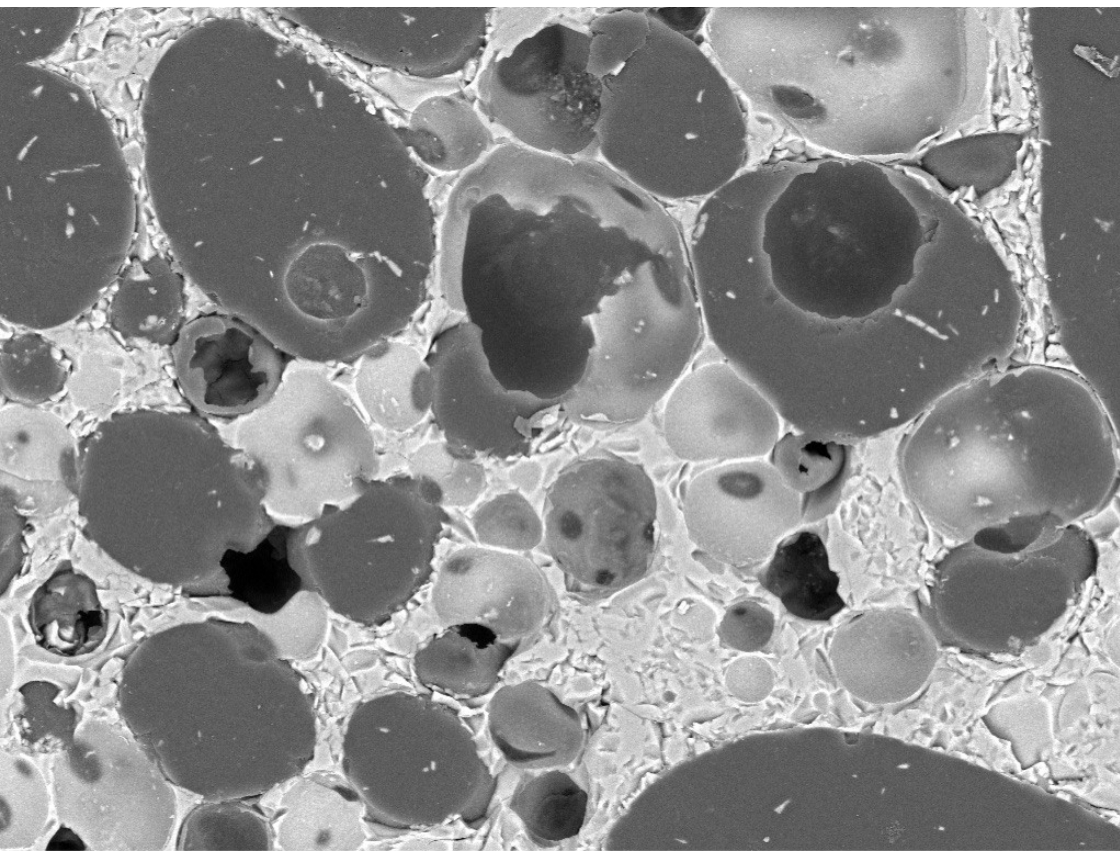


0.5 mm

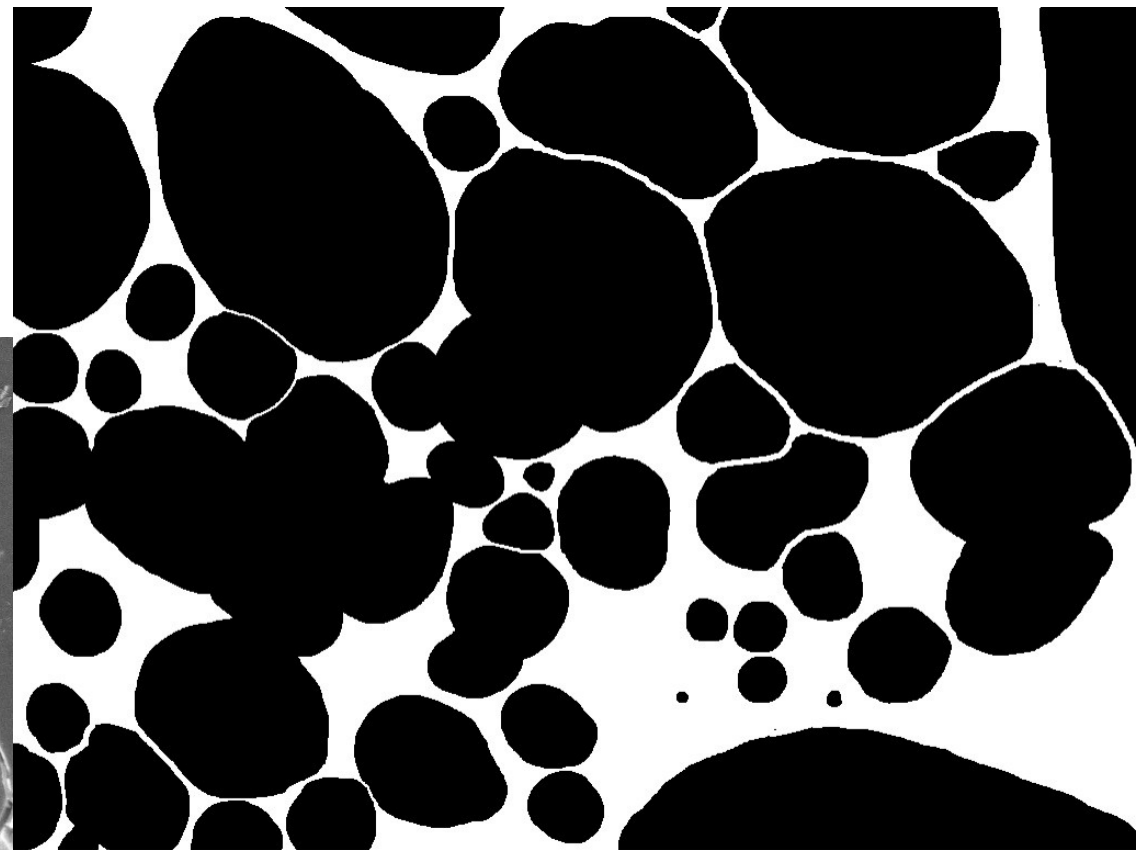


0.5 mm

Sample GIN1-8 480X (8)



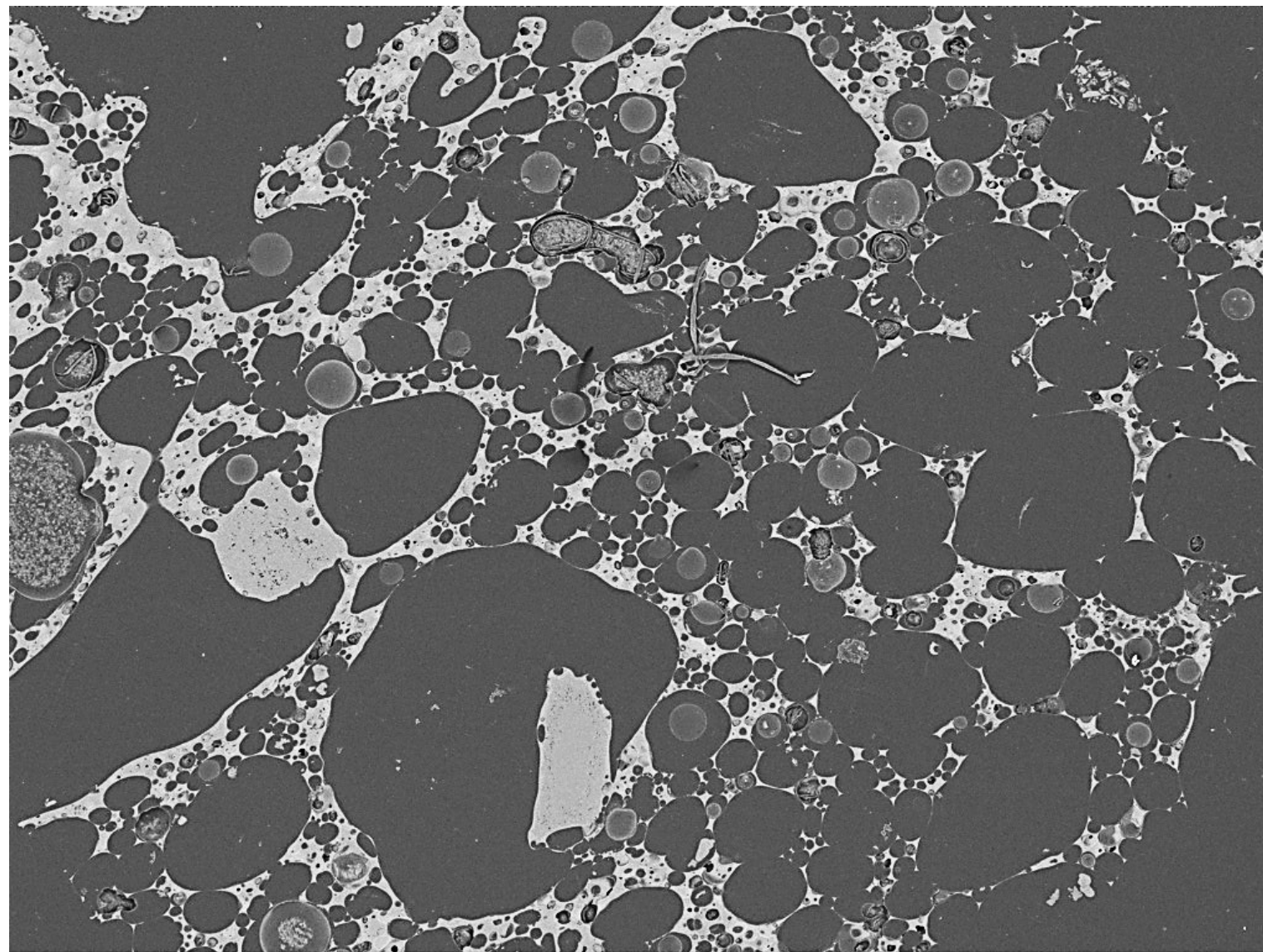
0.5 mm



0.5 mm



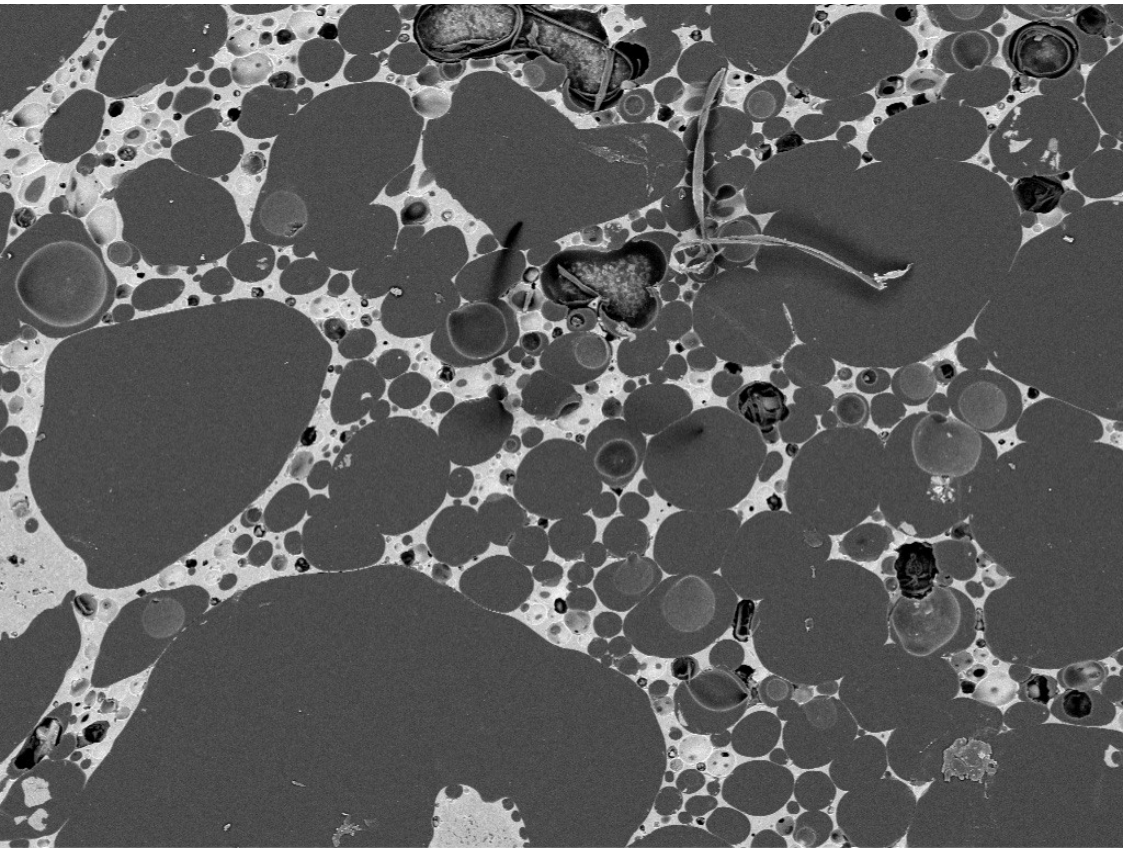
Sample GIN8-4, 60X



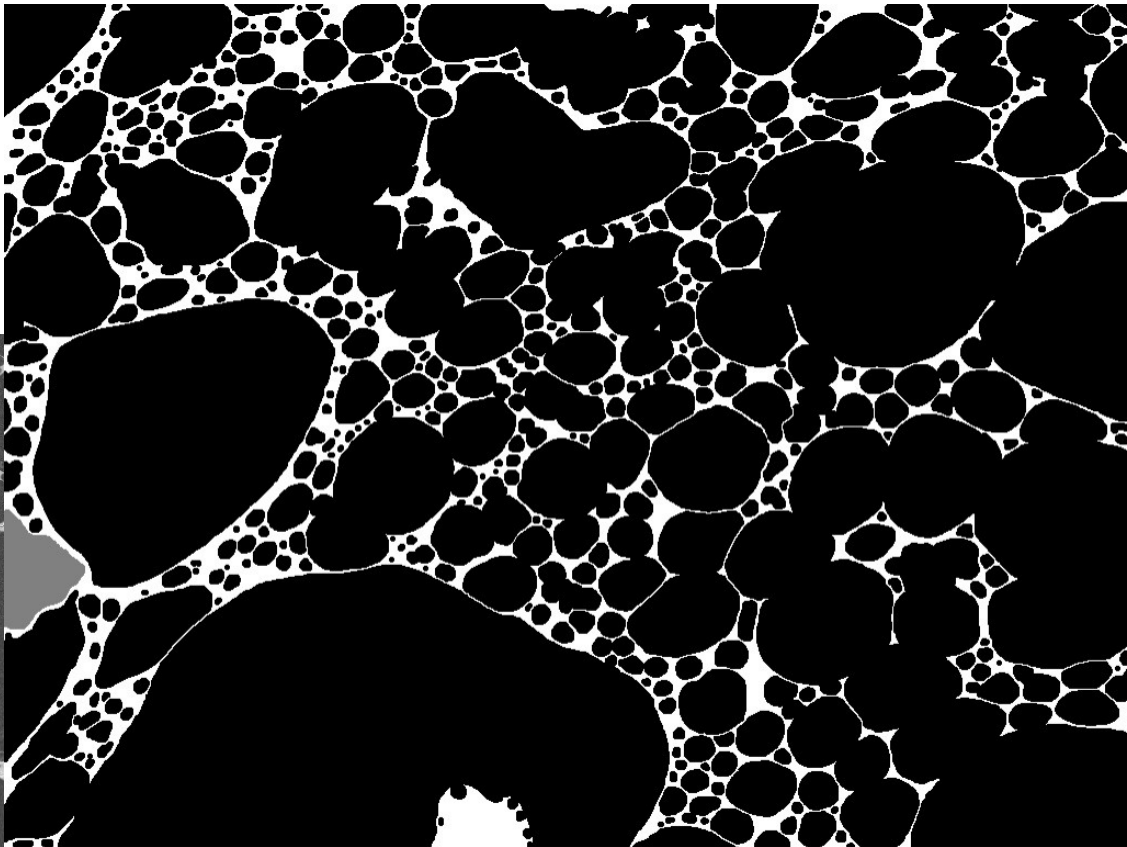
1 mm



Sample GIN8-4 120X (1)

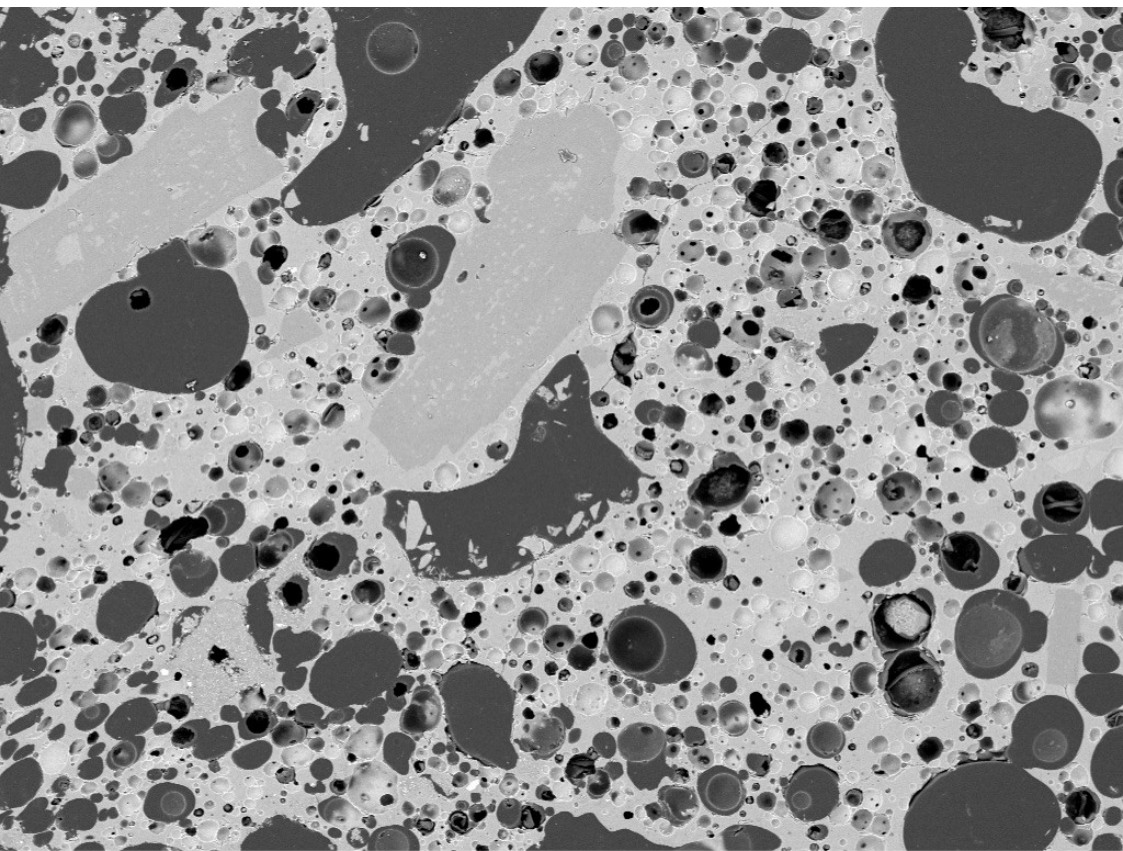


1 mm

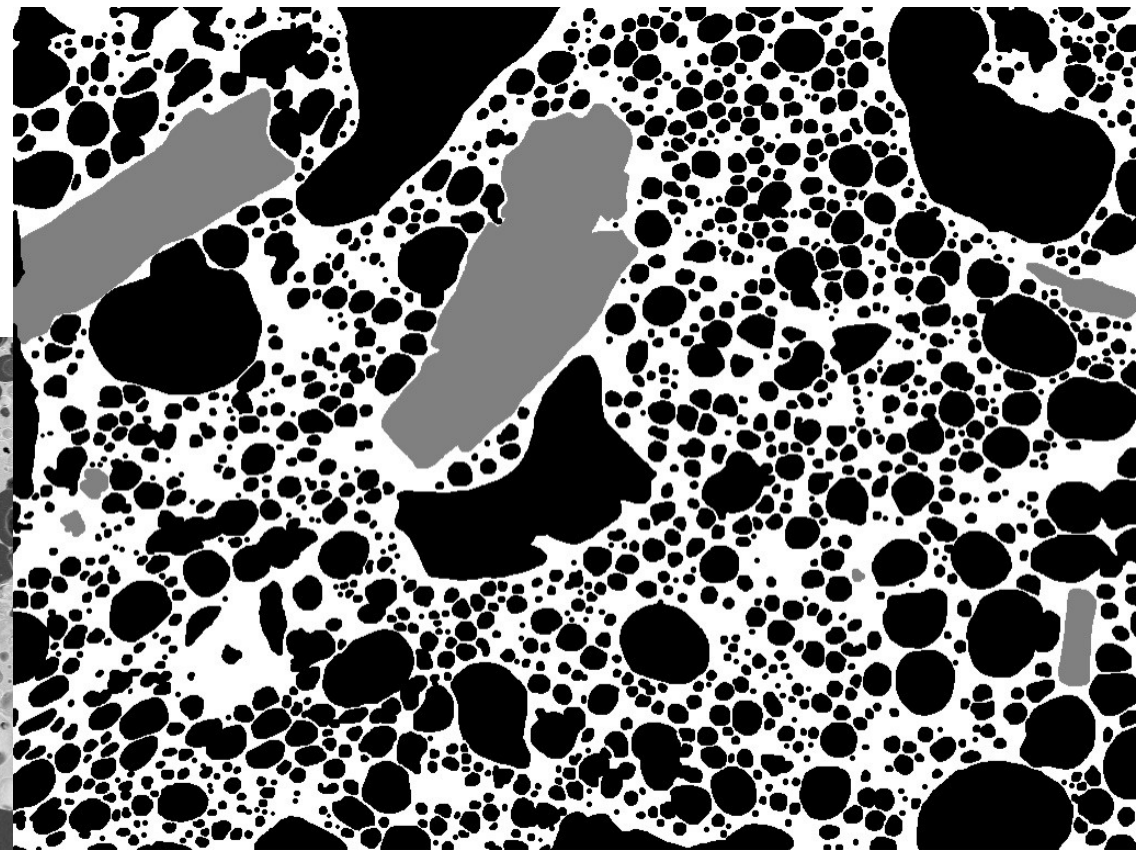


1 mm

Sample GIN8-4 120X (2)

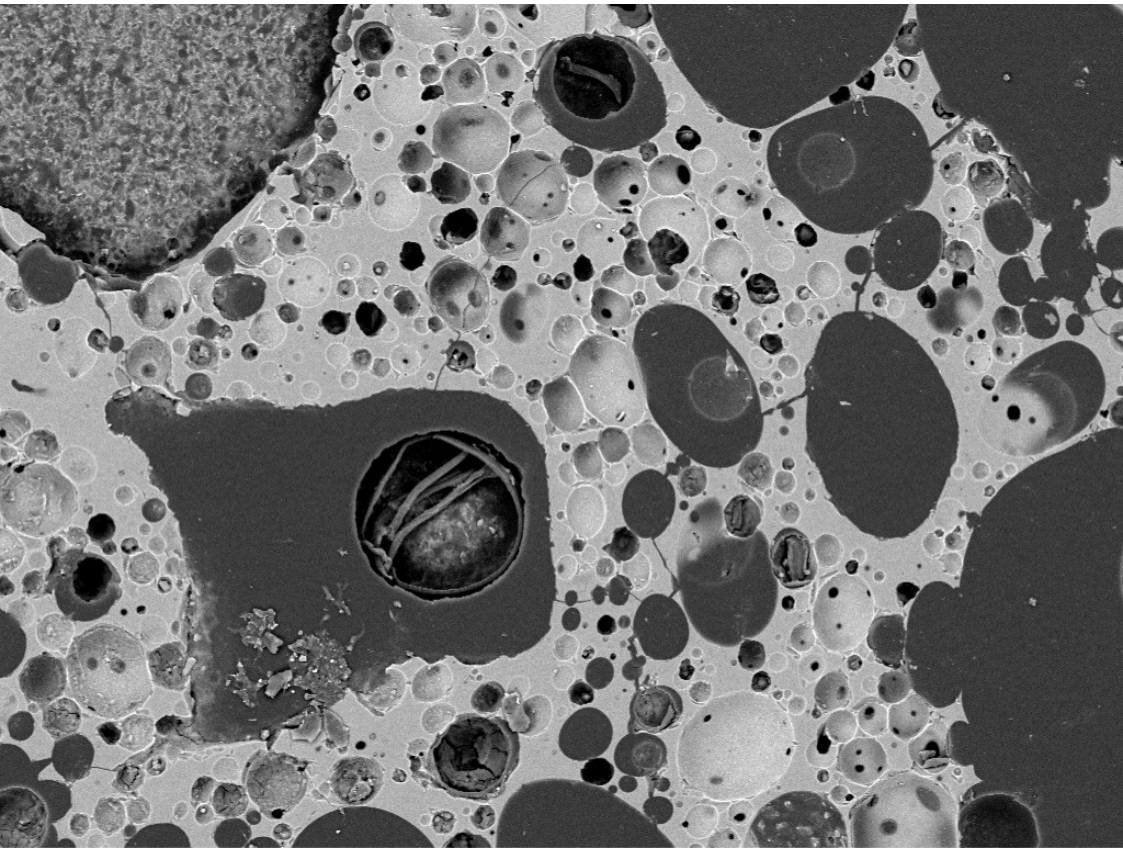


1 mm

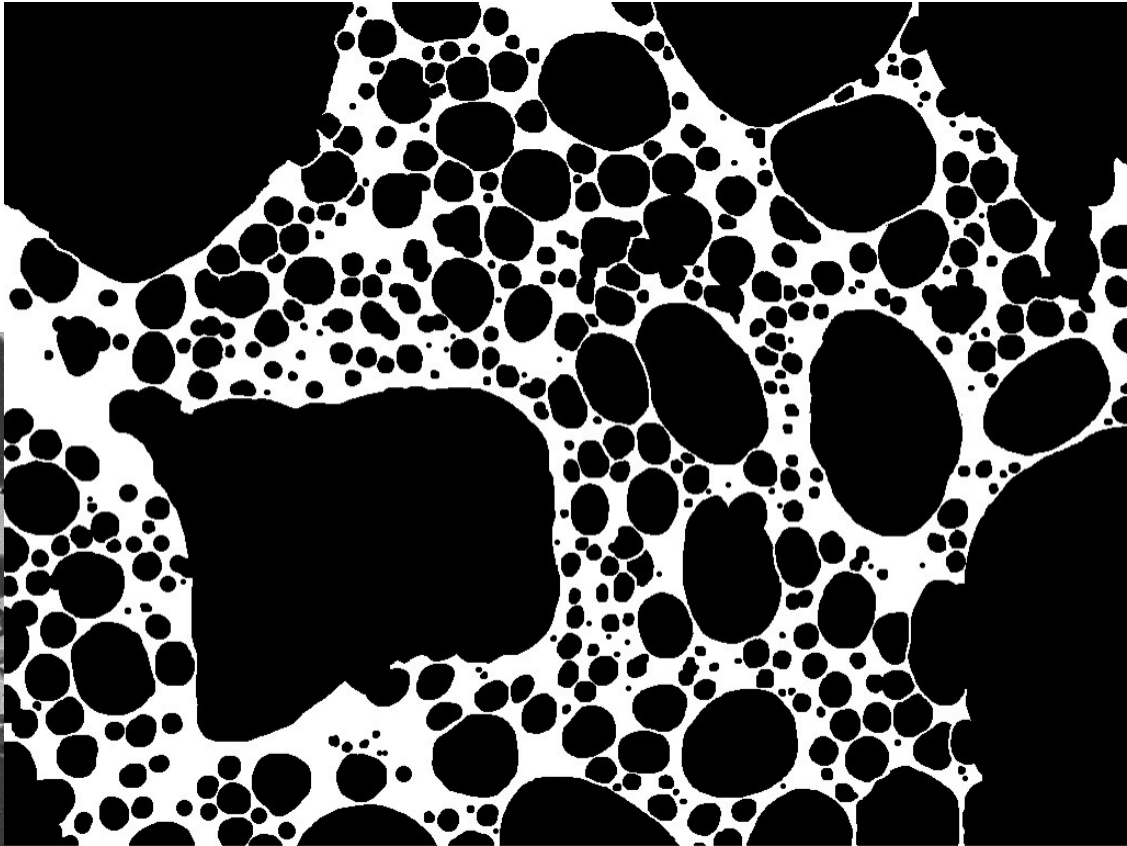


1 mm

Sample GIN8-4 240X (1)



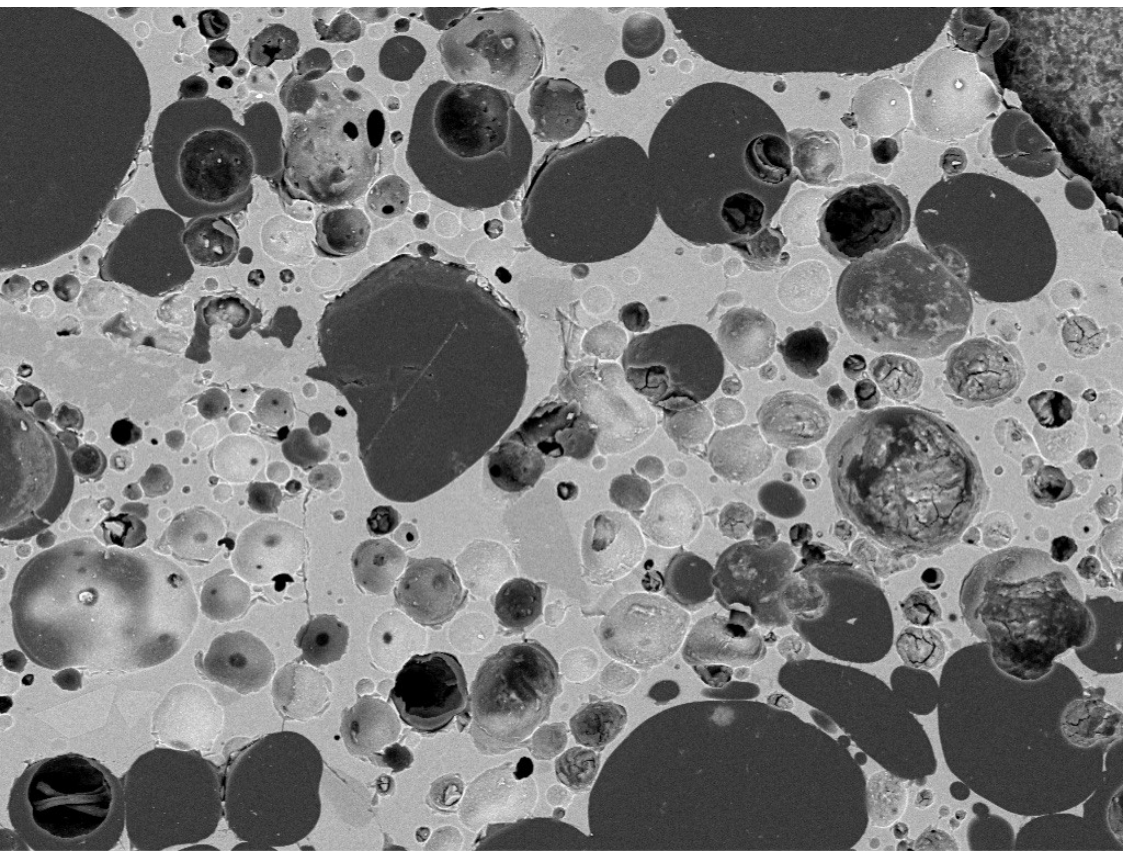
0.5 mm



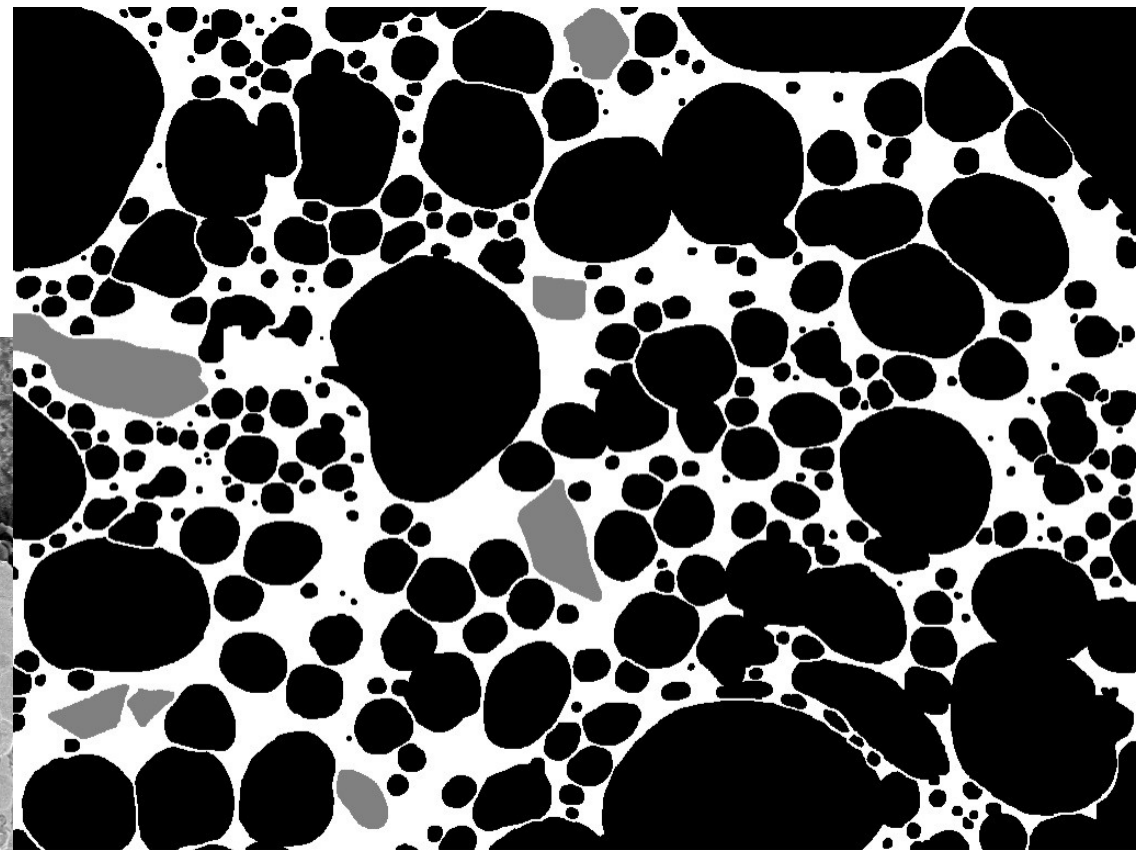
0.5 mm



Sample GIN8-4 240X (2)

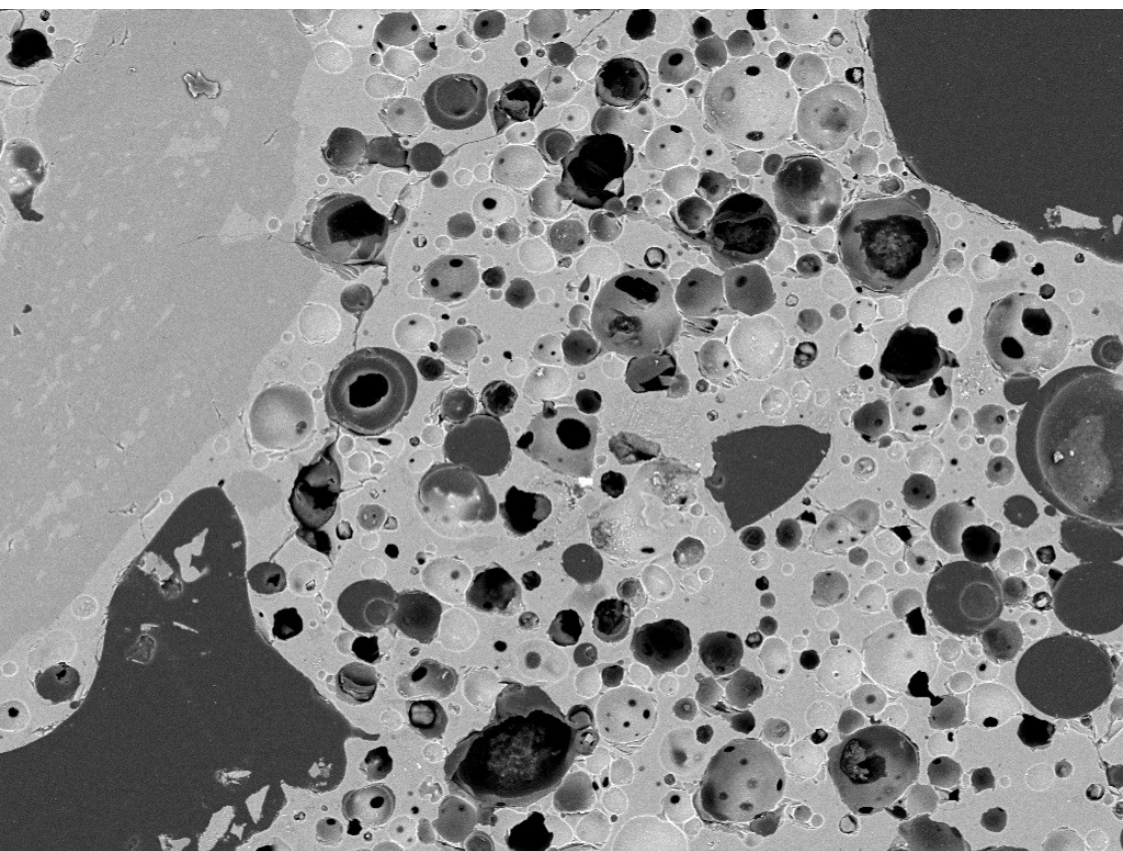


0.5 mm

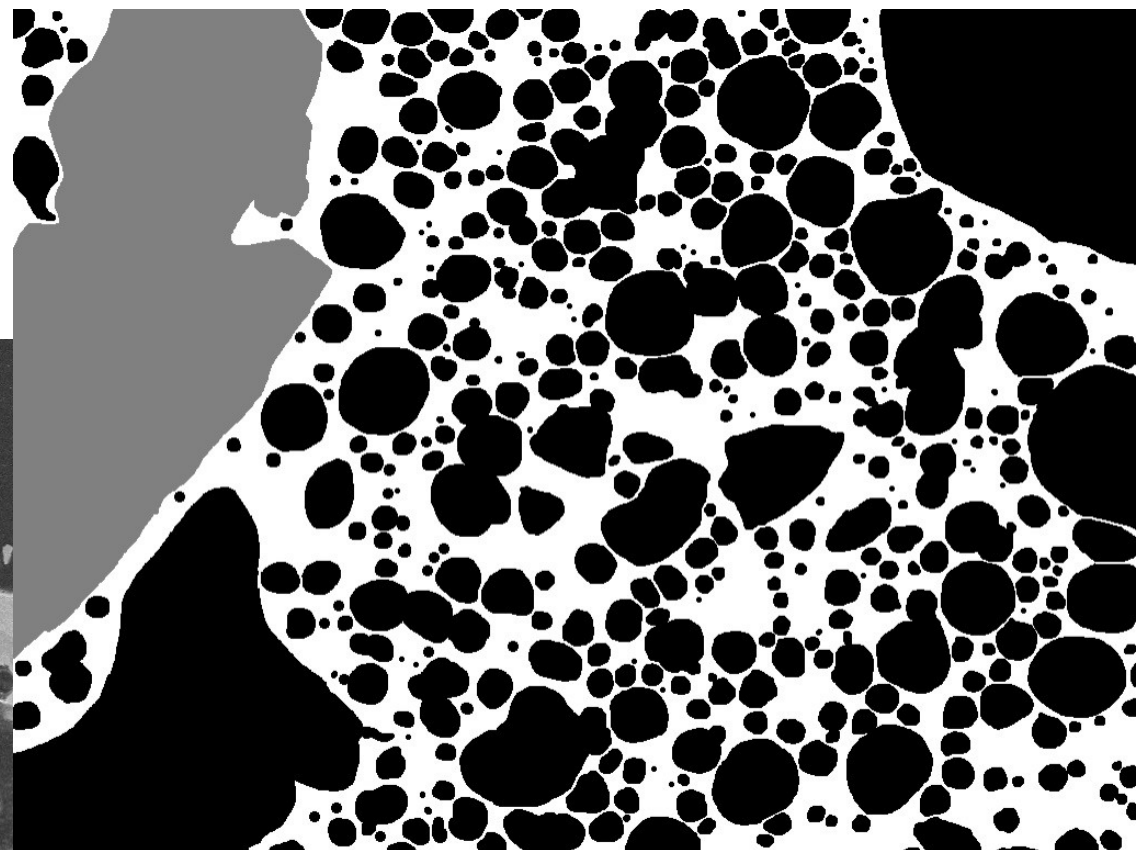


0.5 mm

Sample GIN8-4 240X (3)

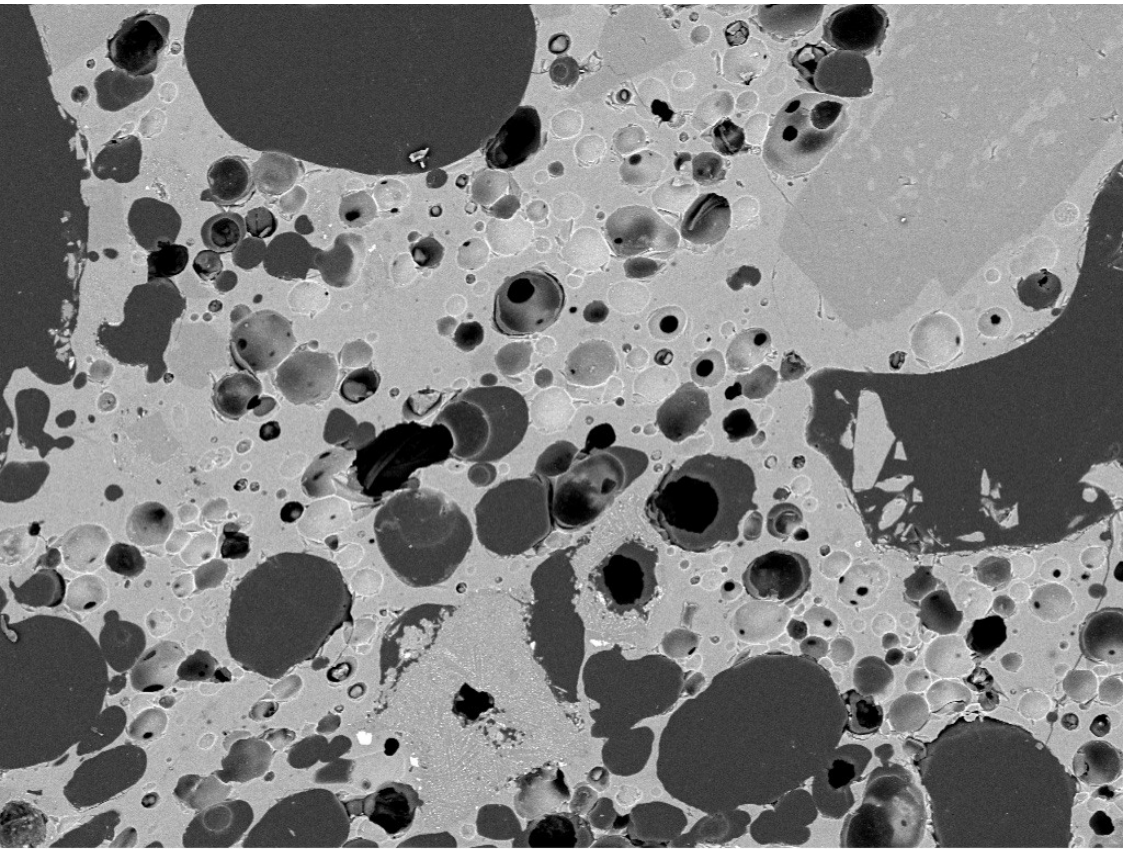


0.5 mm

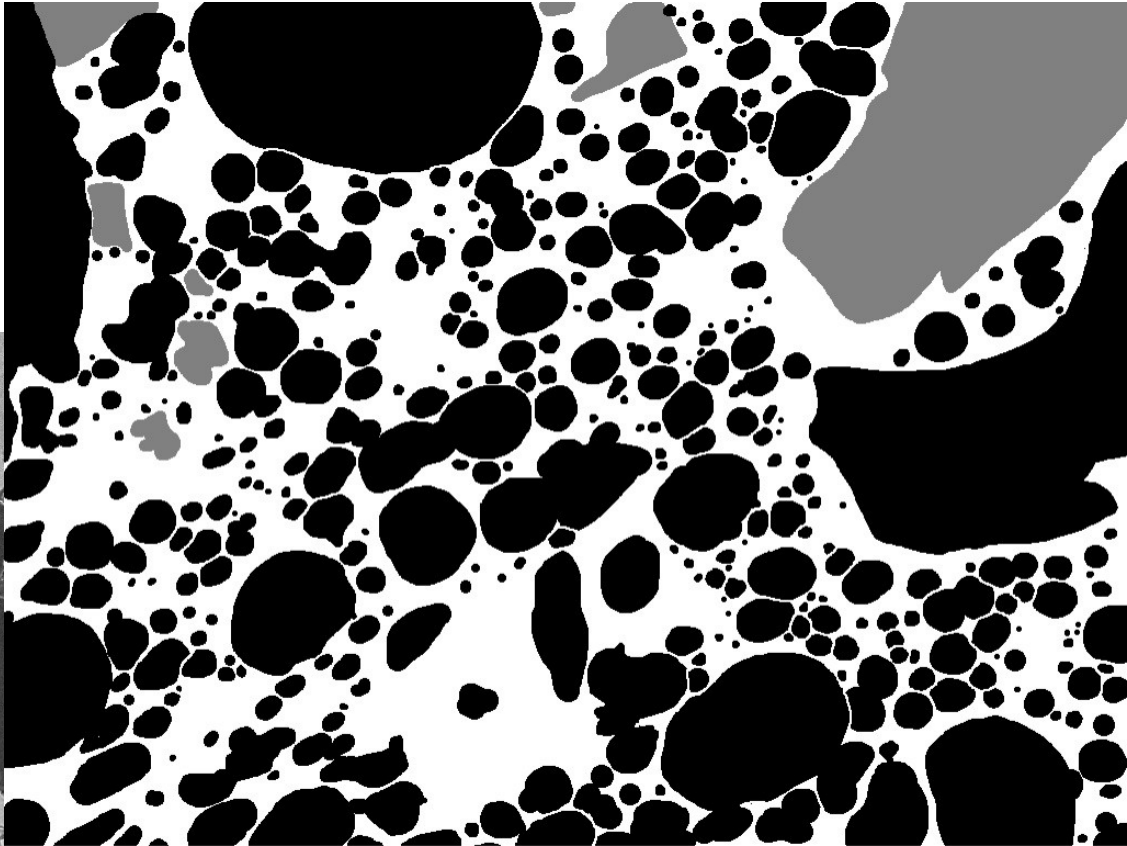


0.5 mm

Sample GIN8-4 240X (4)

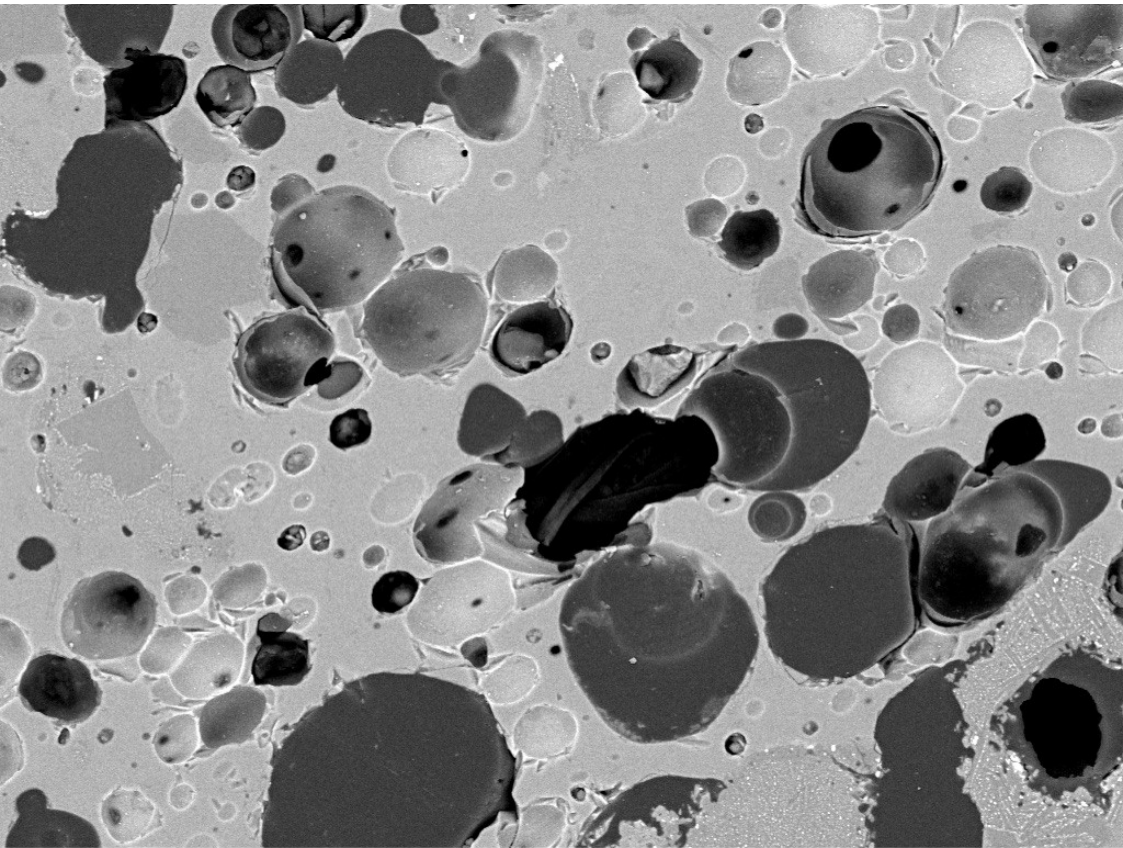


0.5 mm

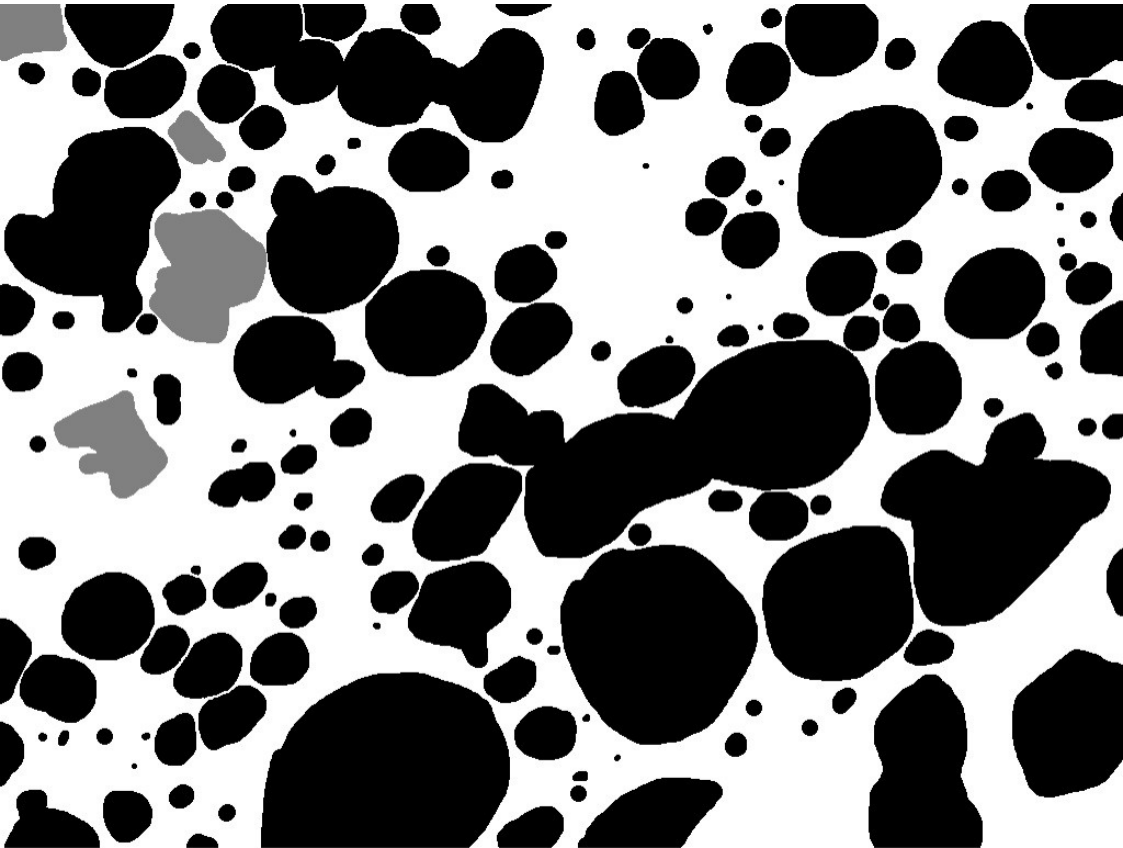


0.5 mm

Sample GIN8-4 480X (1)



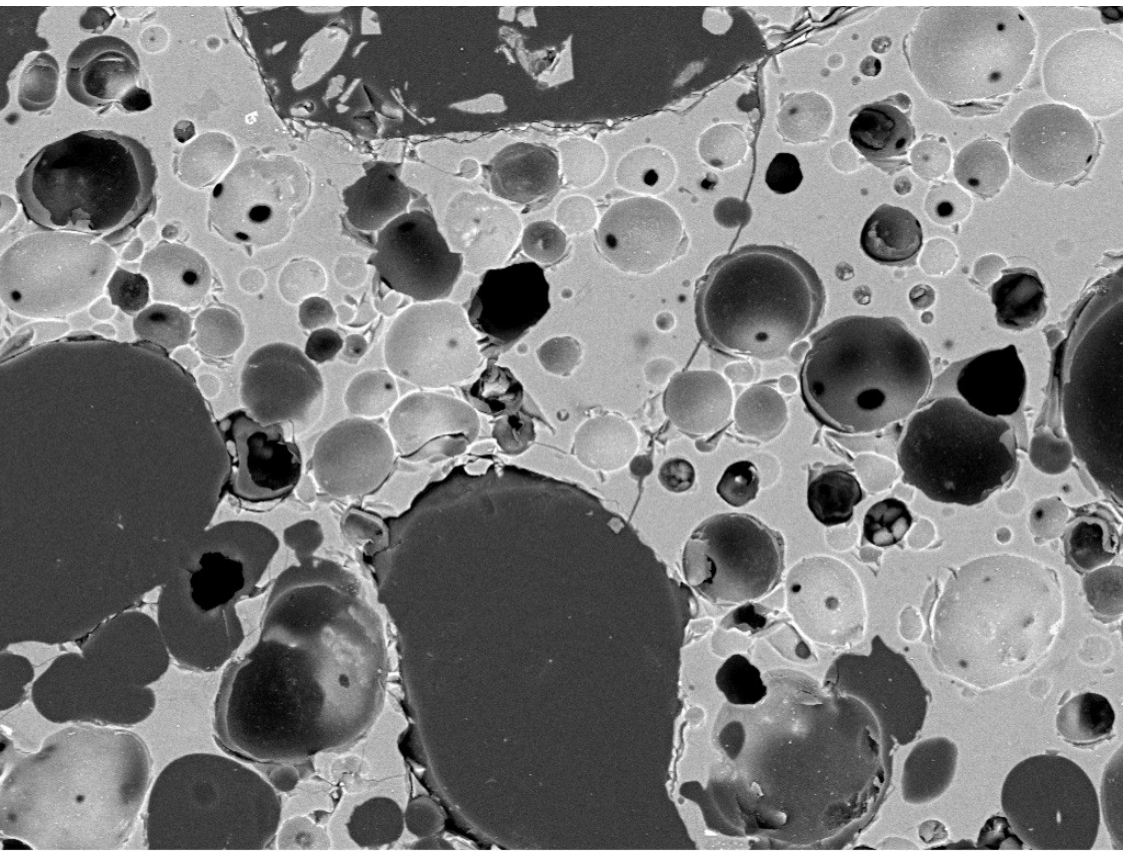
0.5 mm



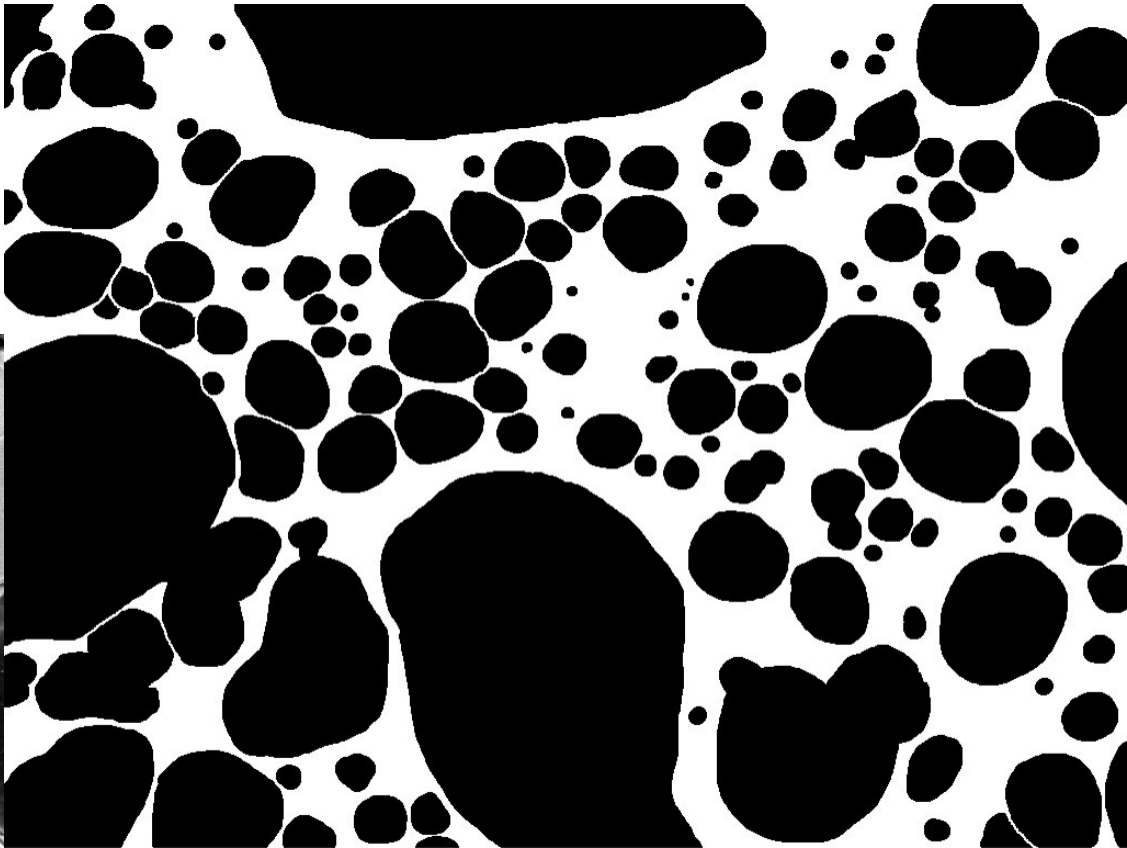
0.5 mm



Sample GIN8-4 480X (2)



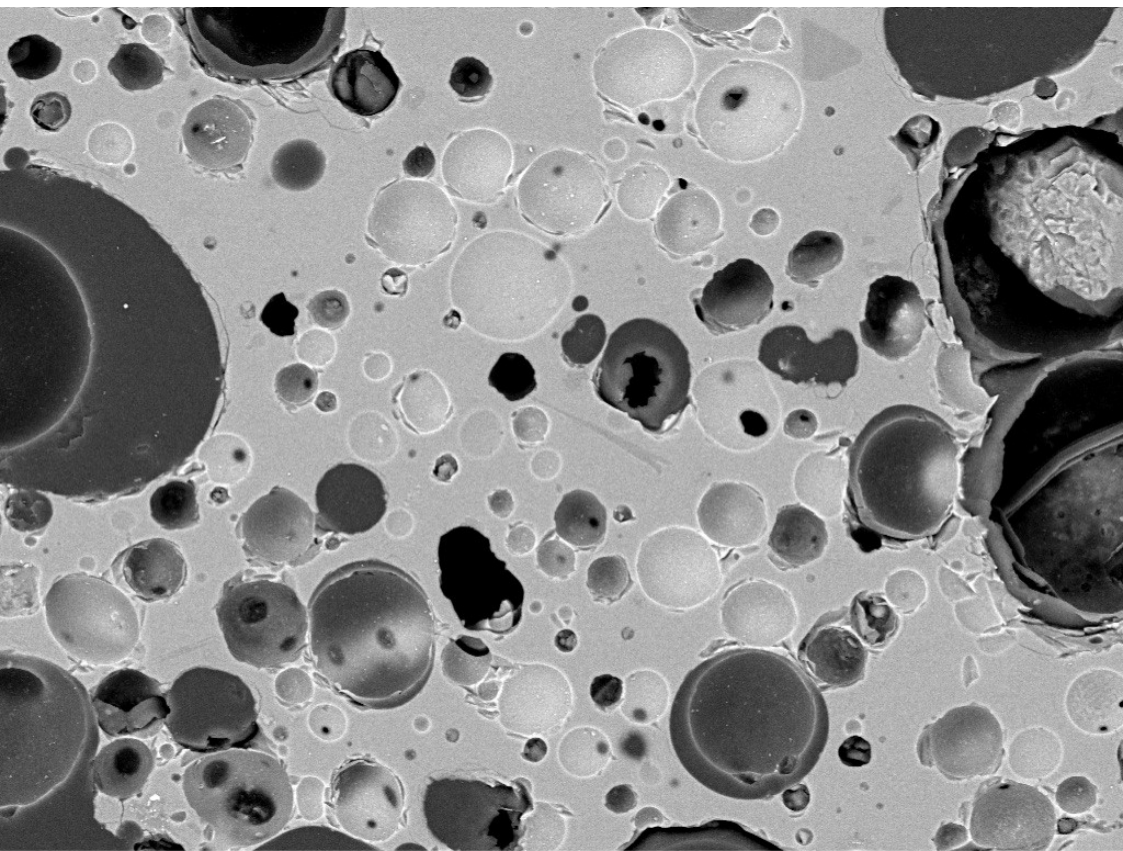
0.5 mm



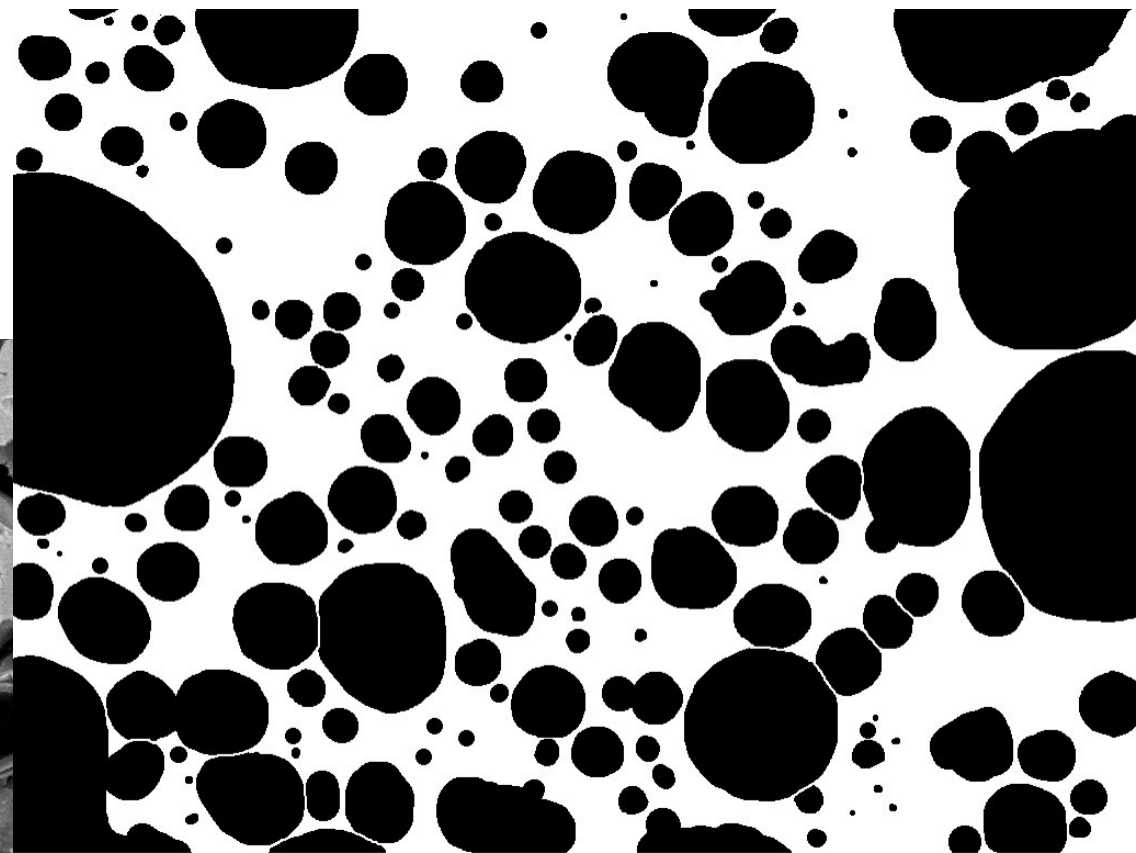
0.5 mm



Sample GIN8-4 480X (3)

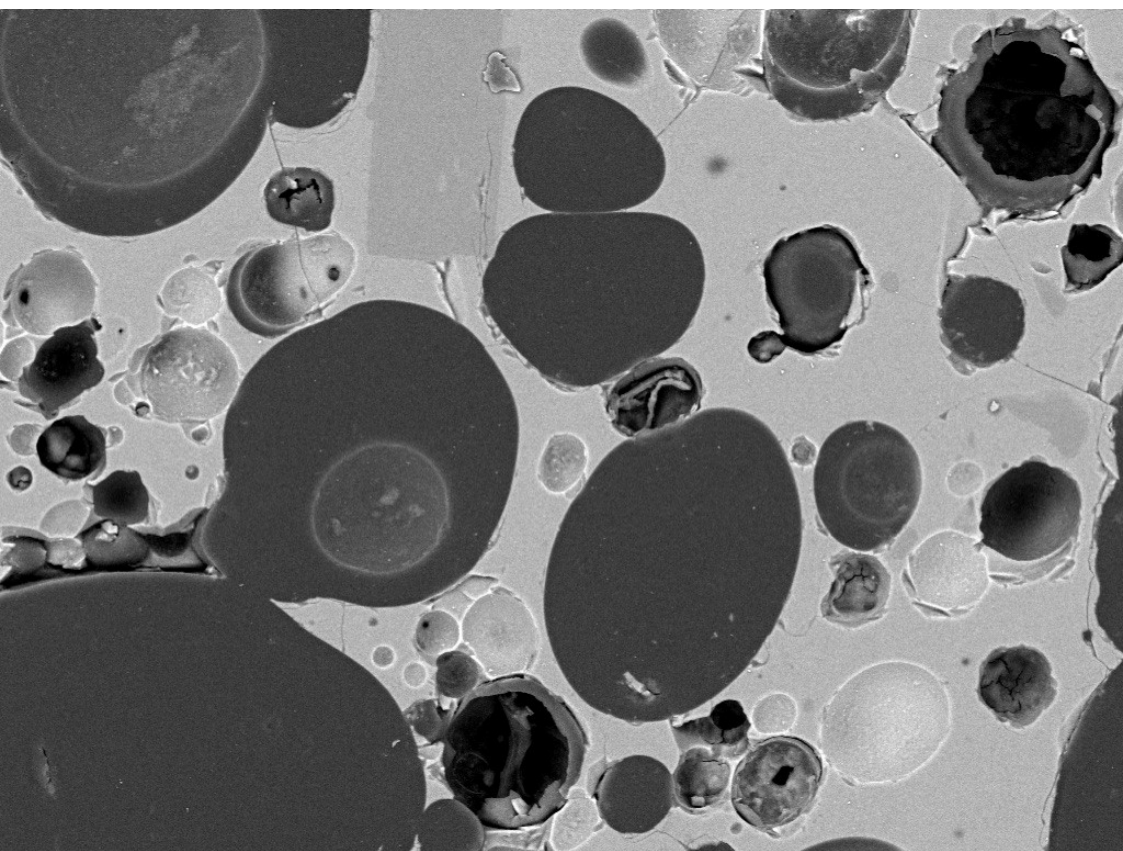


0.5 mm

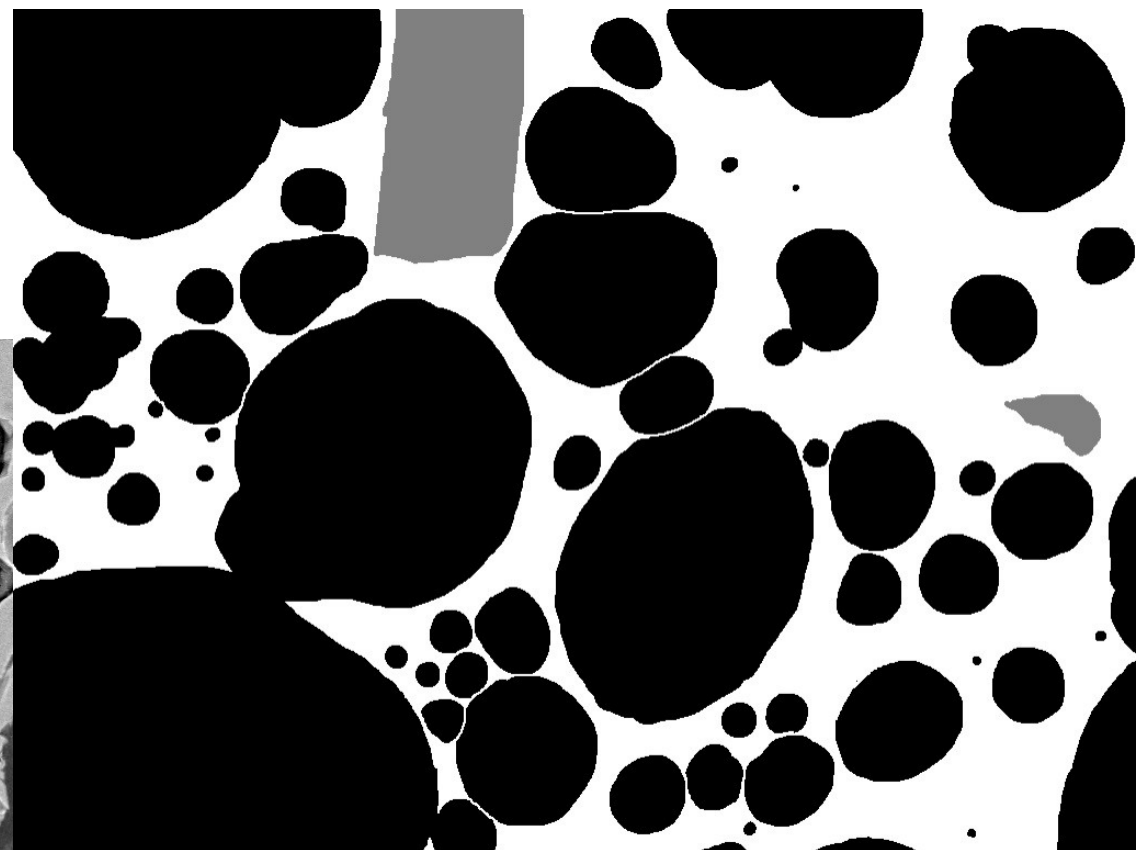


0.5 mm

Sample GIN8-4 480X (4)

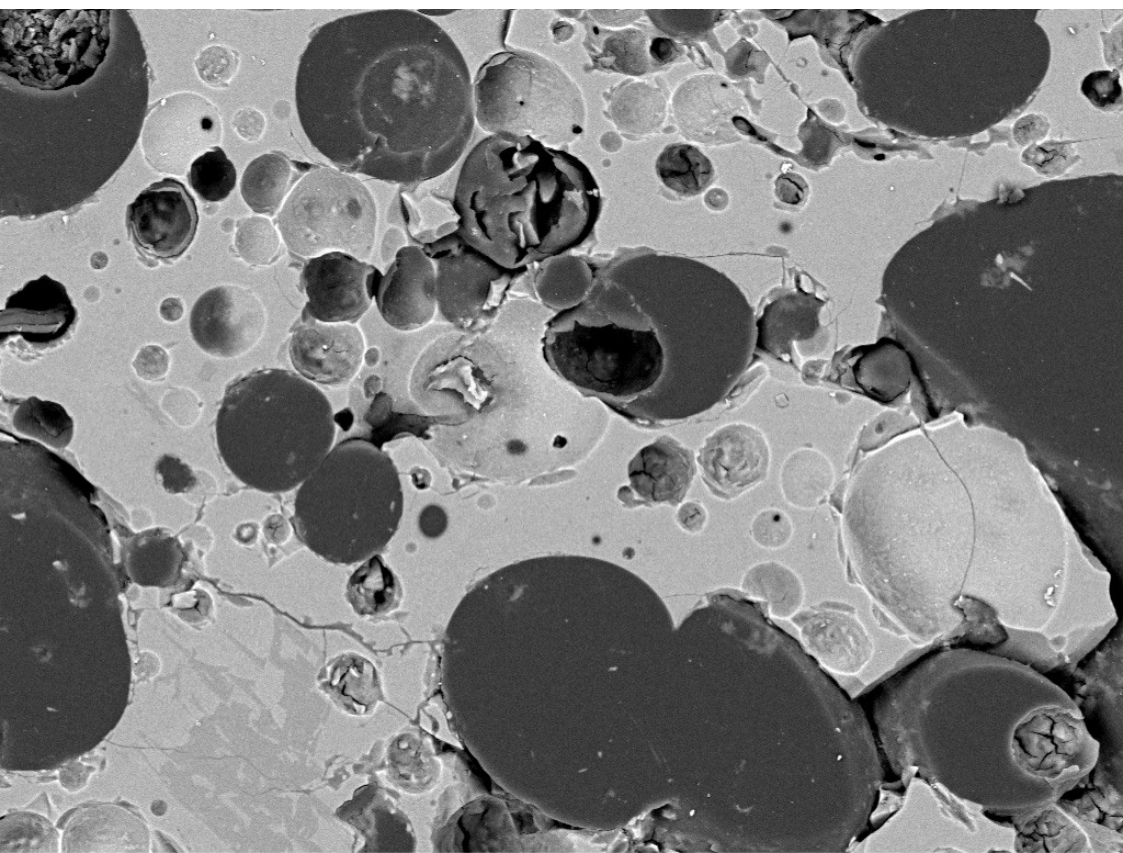


0.5 mm

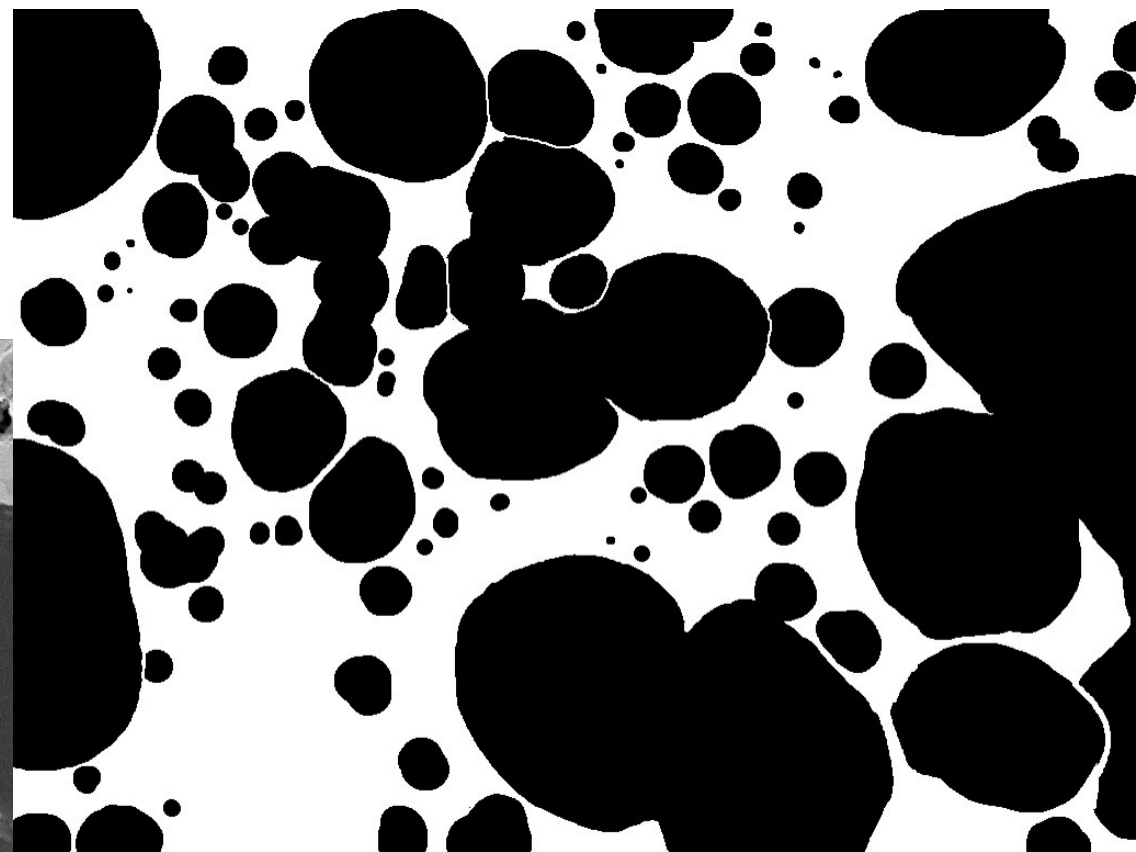


0.5 mm

Sample GIN8-4 480X (5)

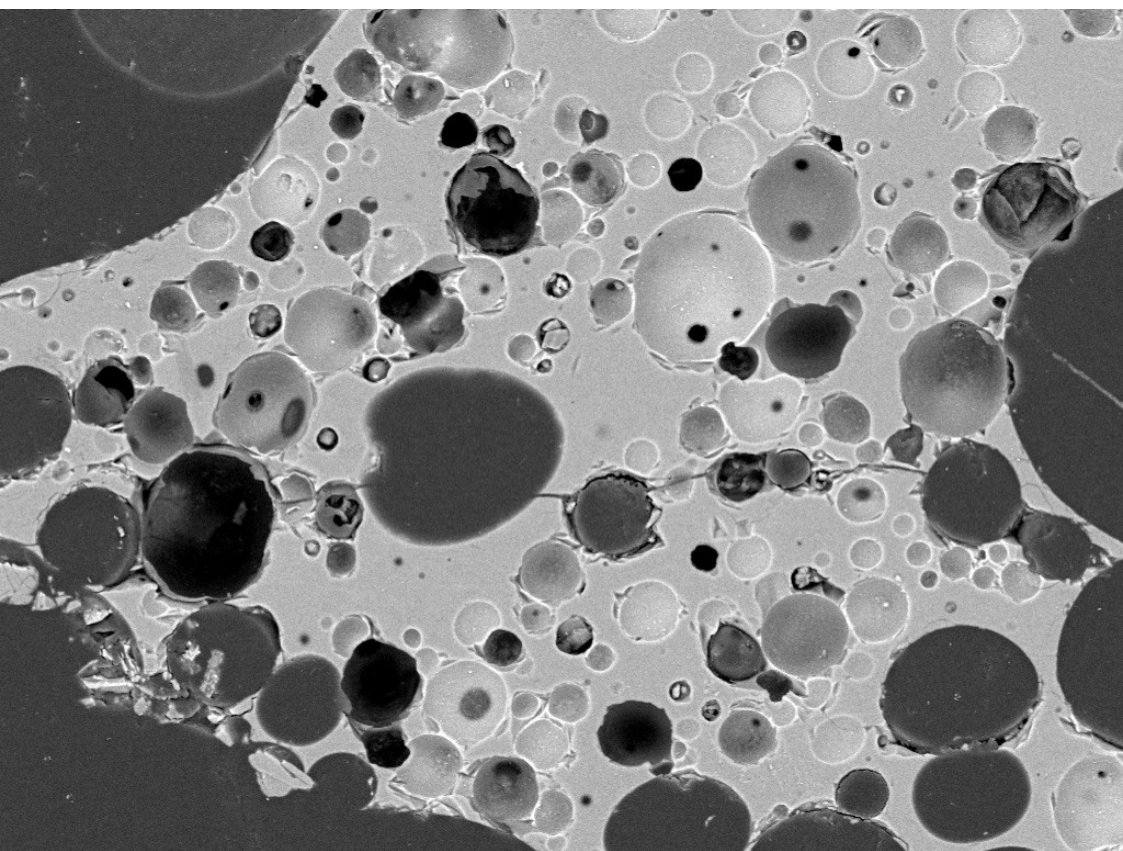


0.5 mm

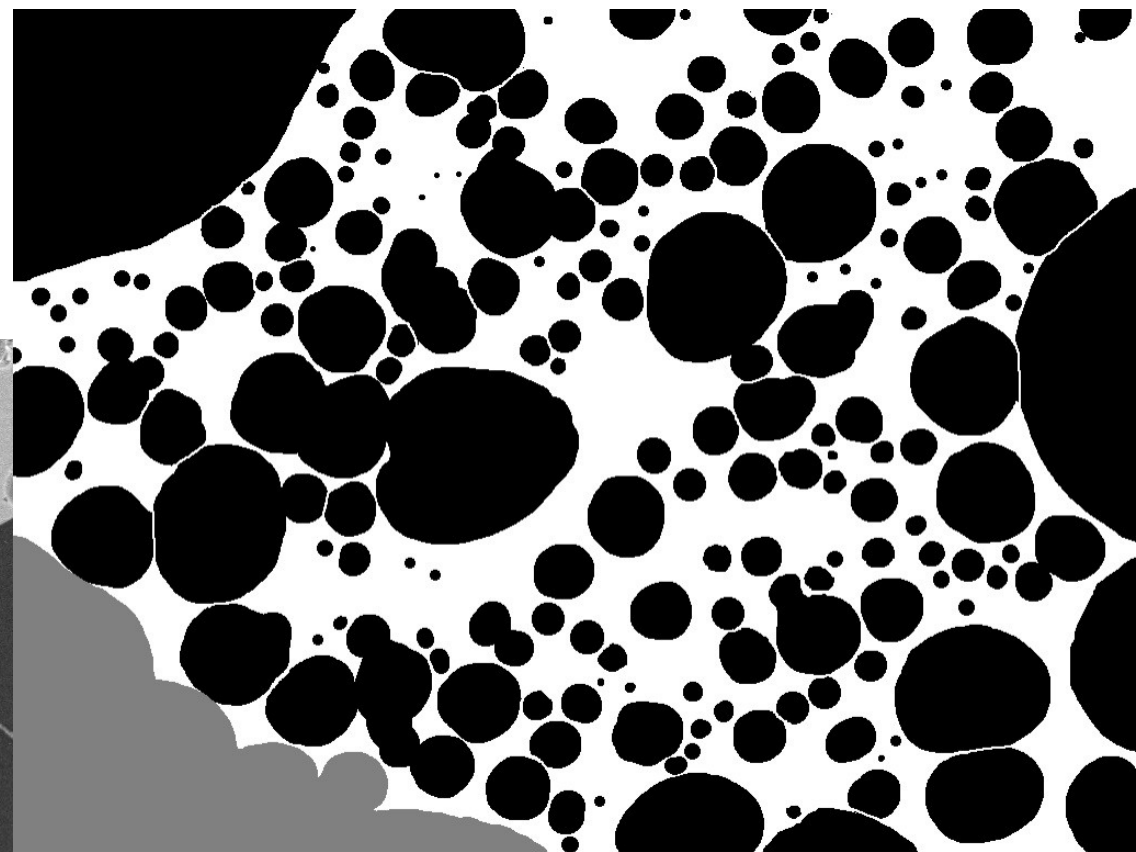


0.5 mm

Sample GIN8-4 480X (6)

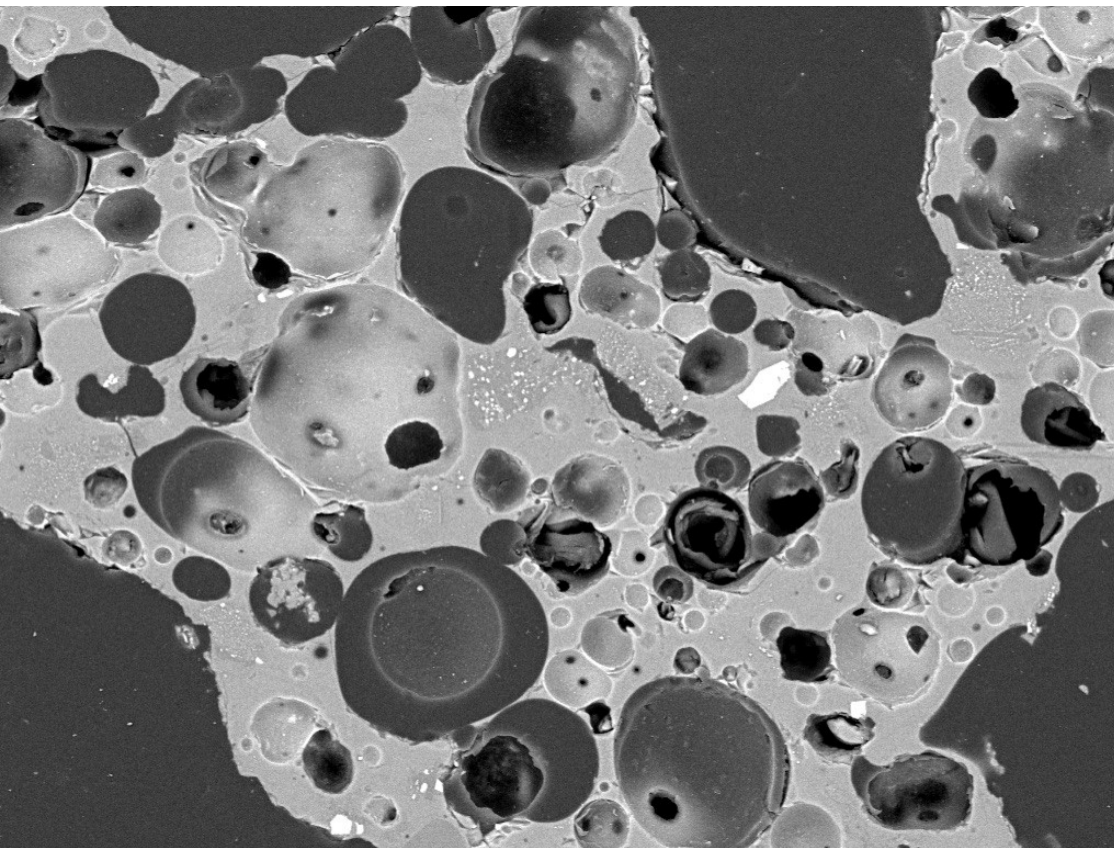


0.5 mm

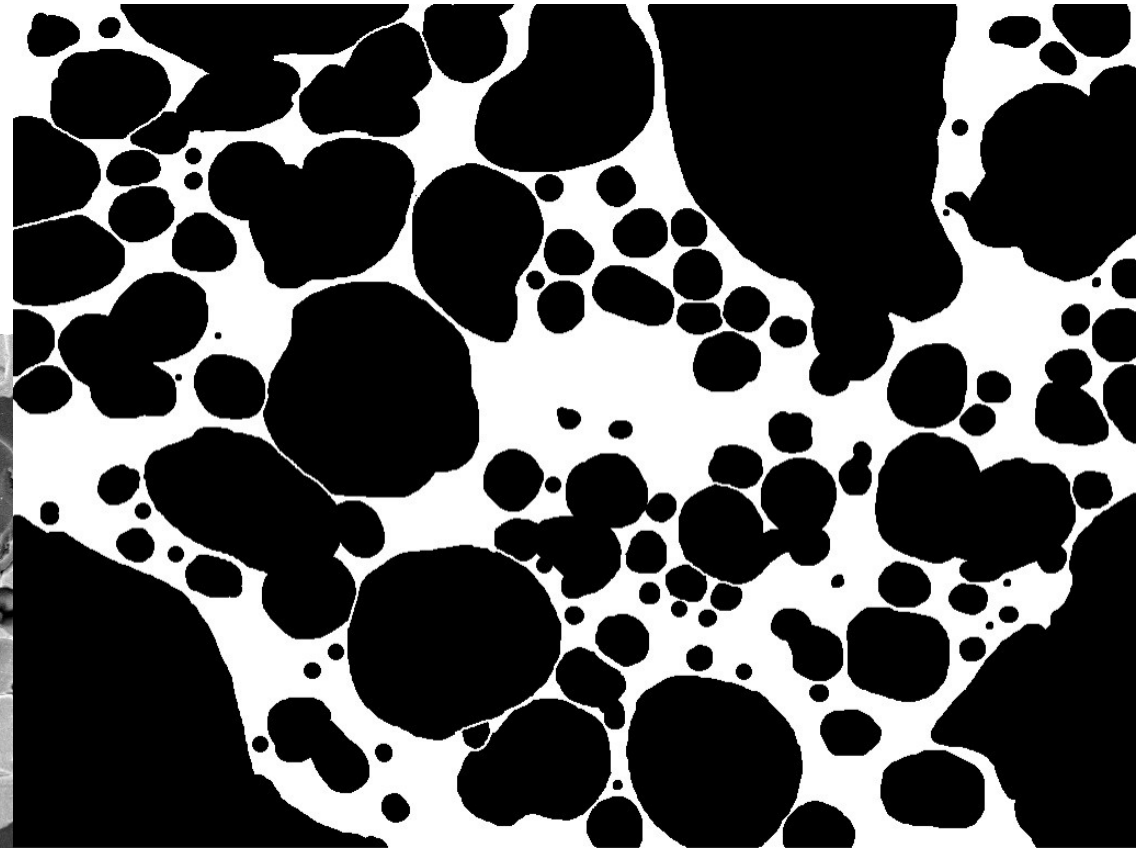


0.5 mm

Sample GIN8-4 480X (7)



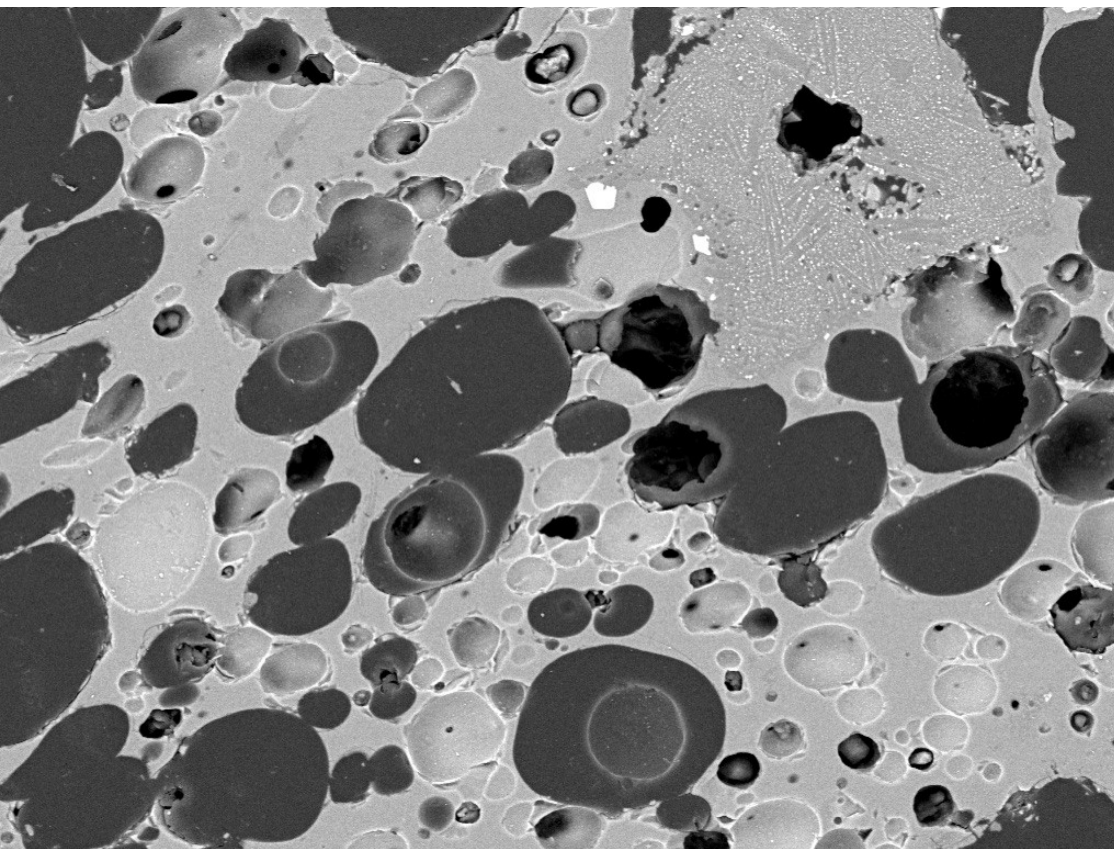
0.5 mm



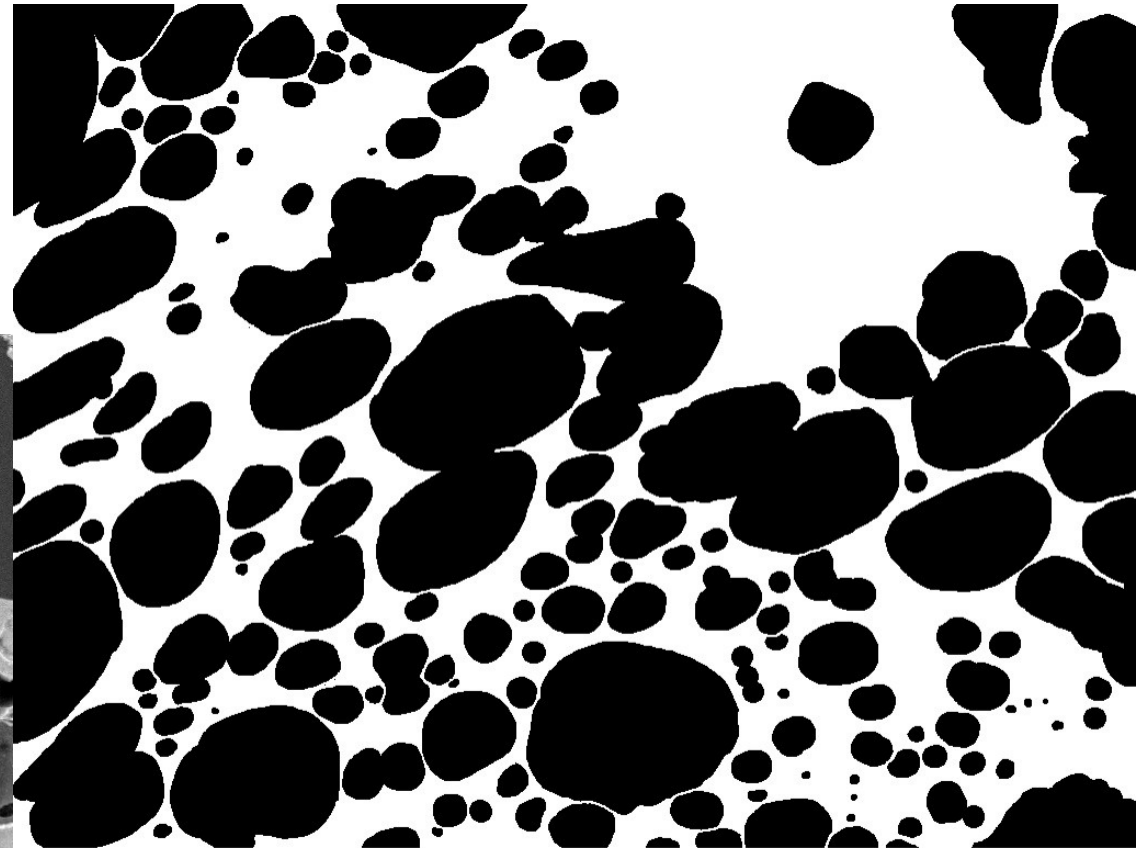
0.5 mm



Sample GIN8-4 480X (8)

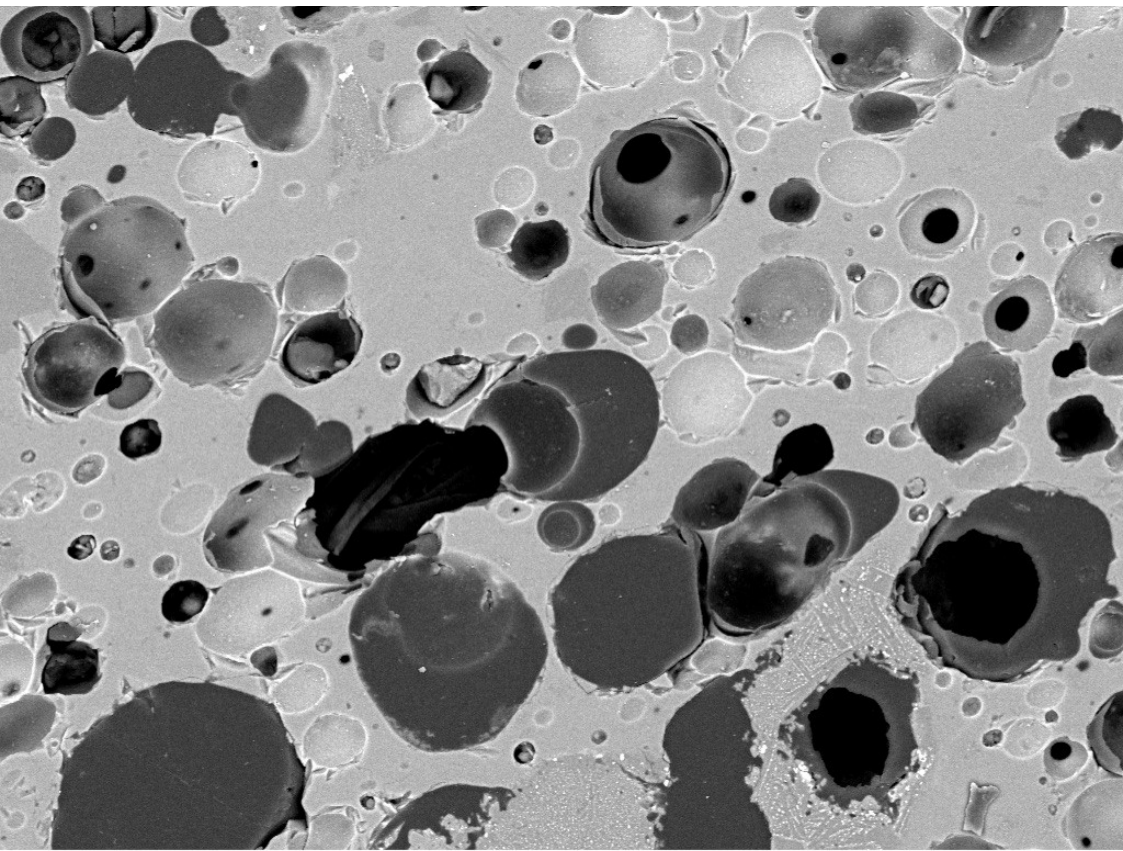


0.5 mm

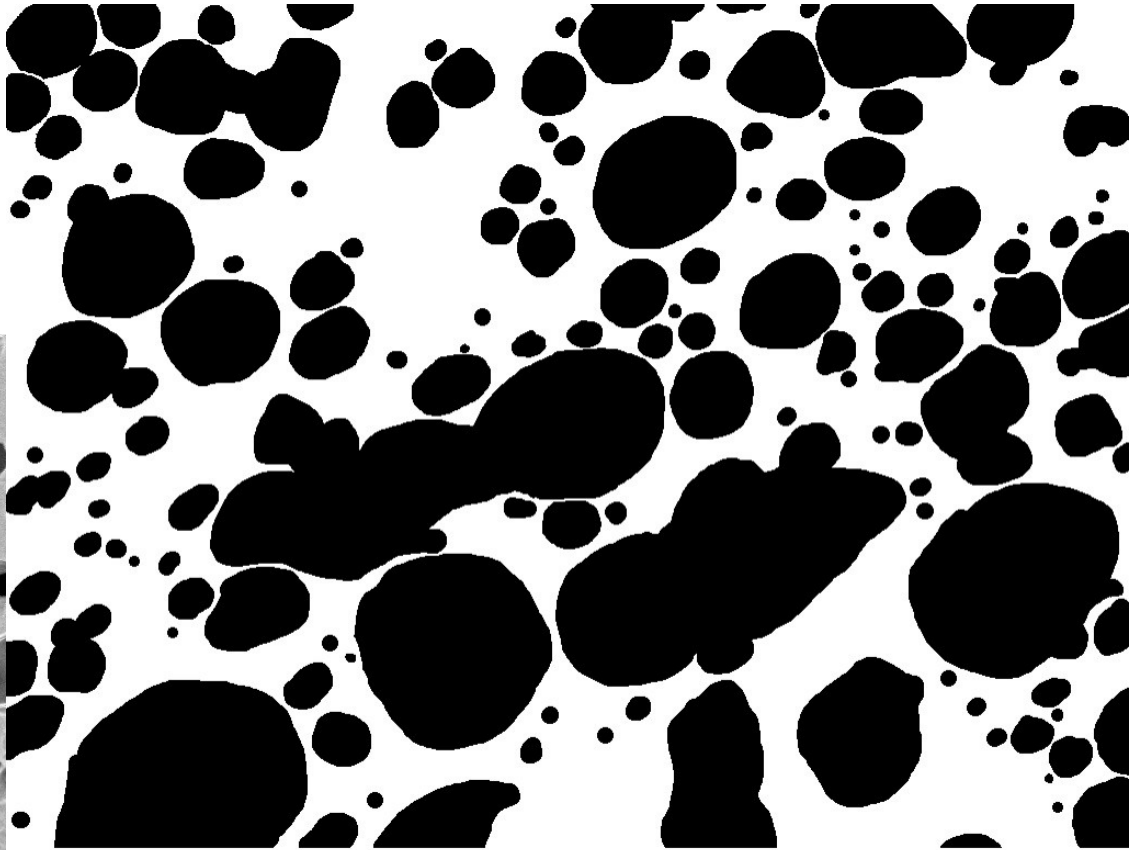


0.5 mm

Sample GIN8-4 480X (9)

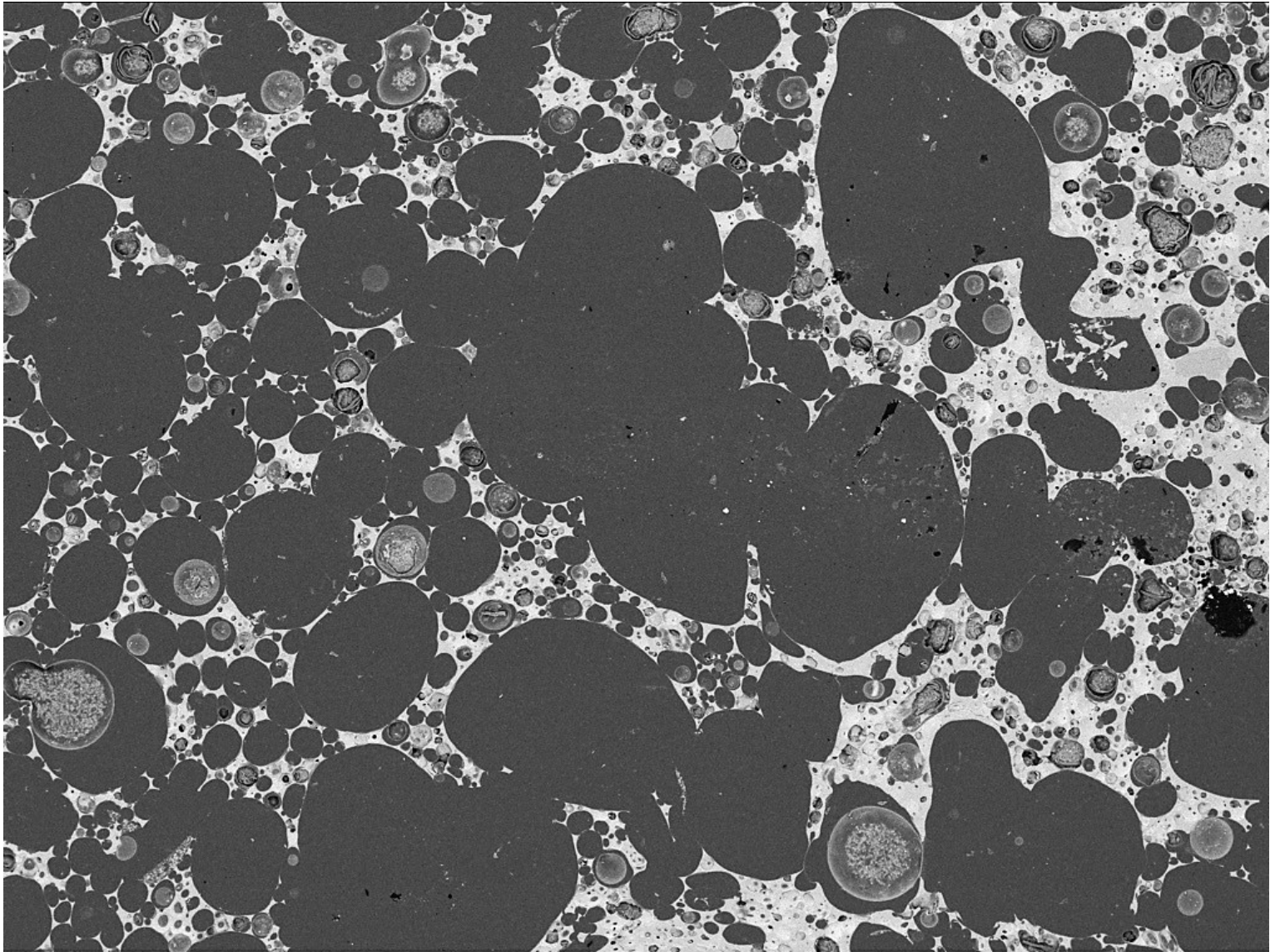


0.5 mm



0.5 mm

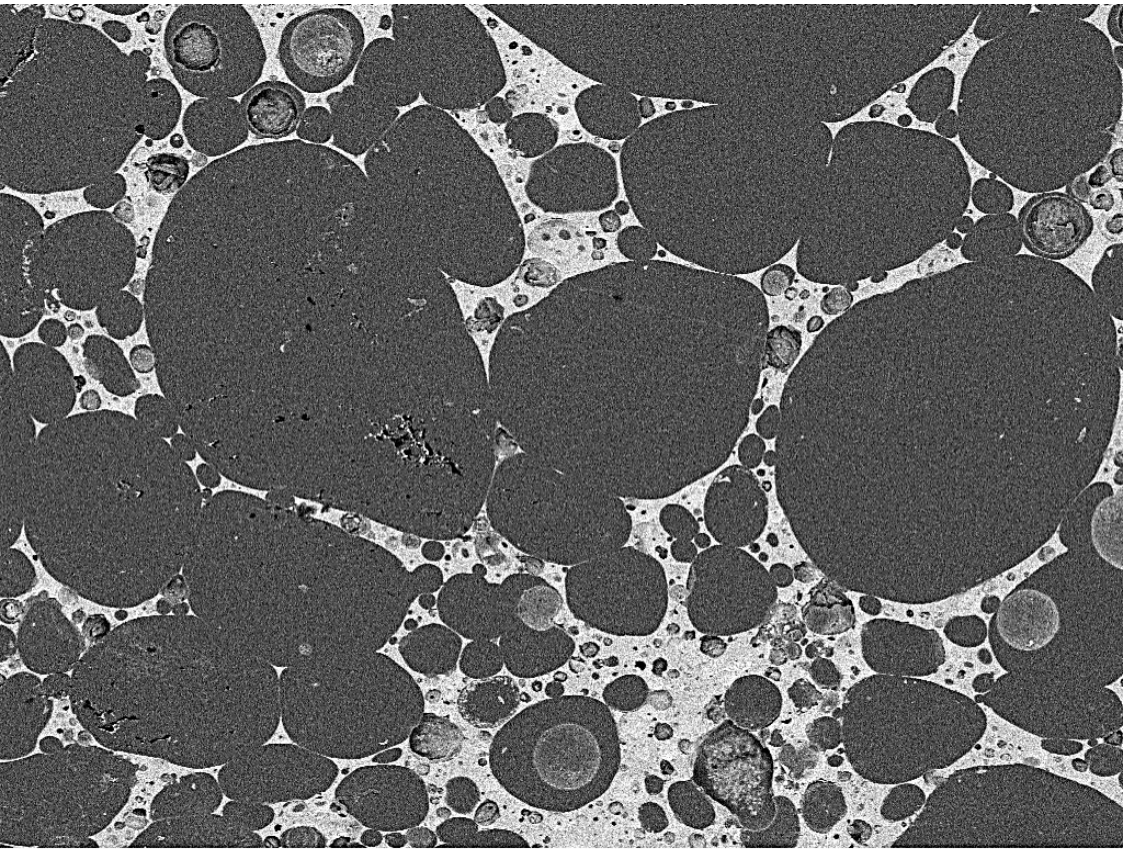
Sample GIN8-16 60X



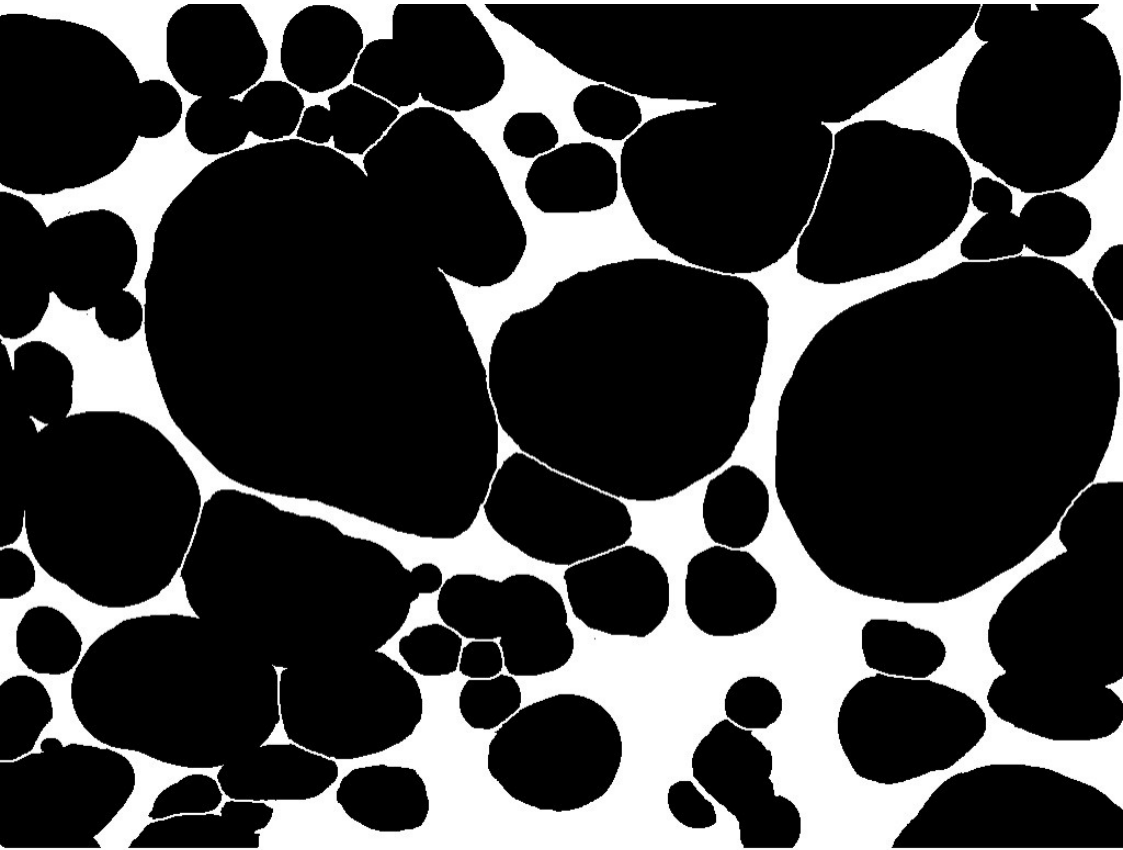
1 mm



Sample GIN8-16 120X (2)



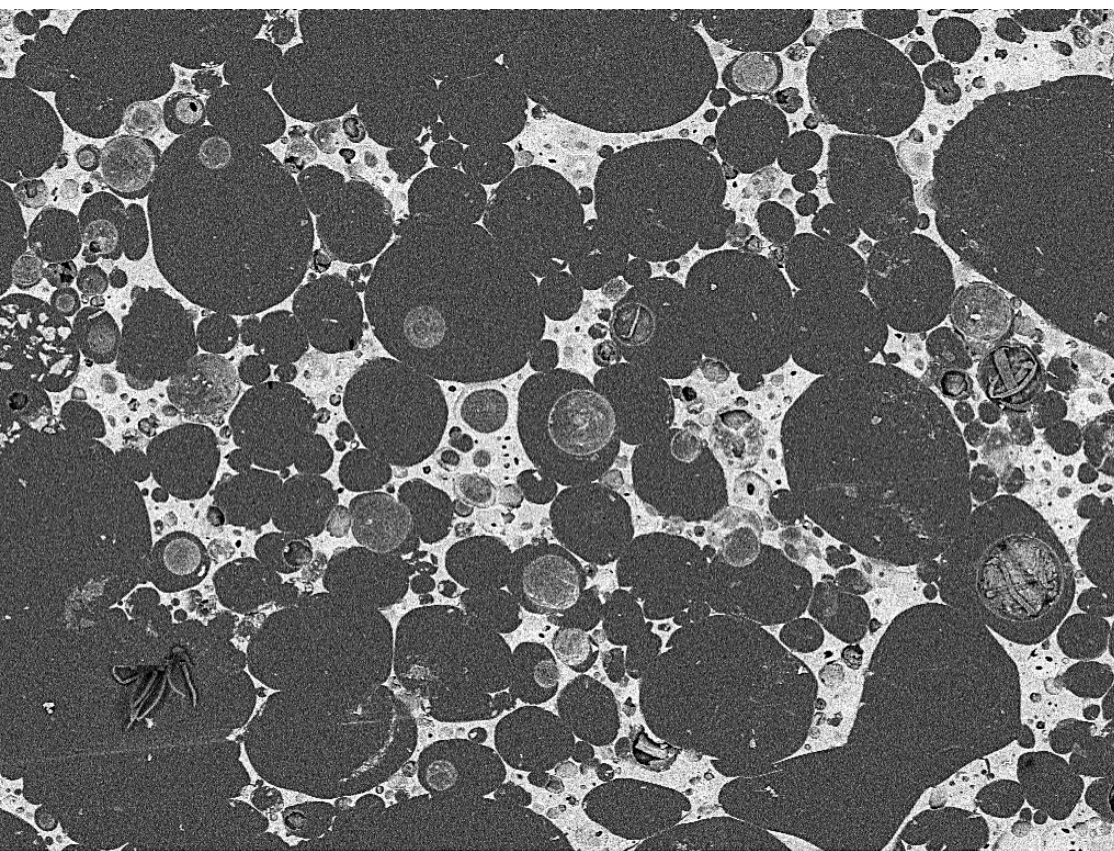
1 mm



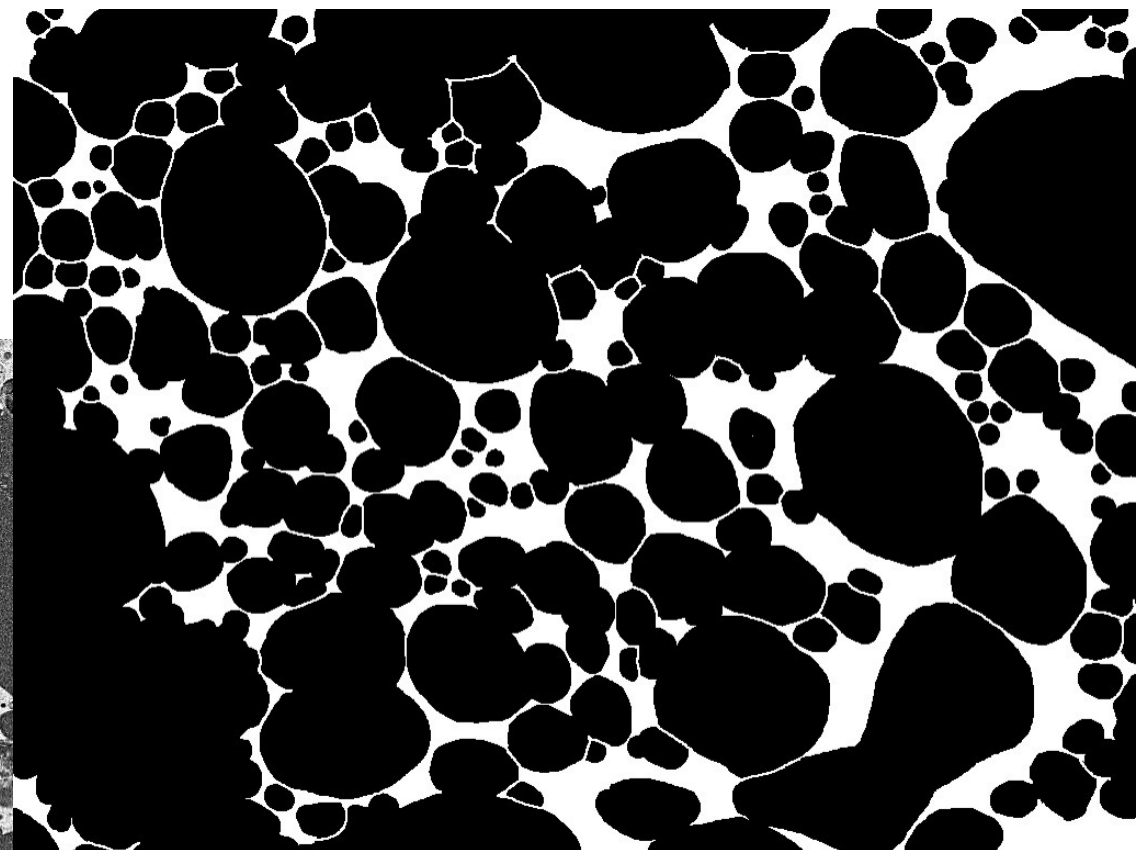
1 mm



Sample GIN8-16 120X (3)



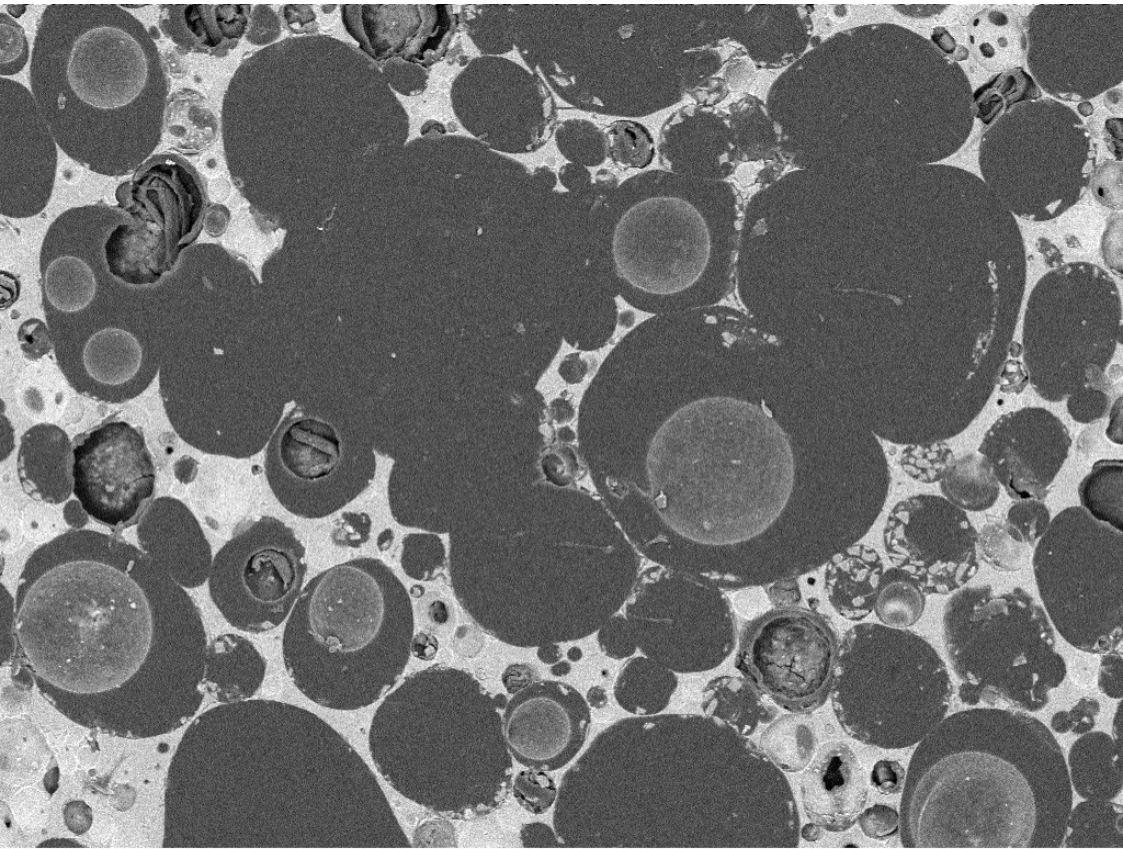
1 mm



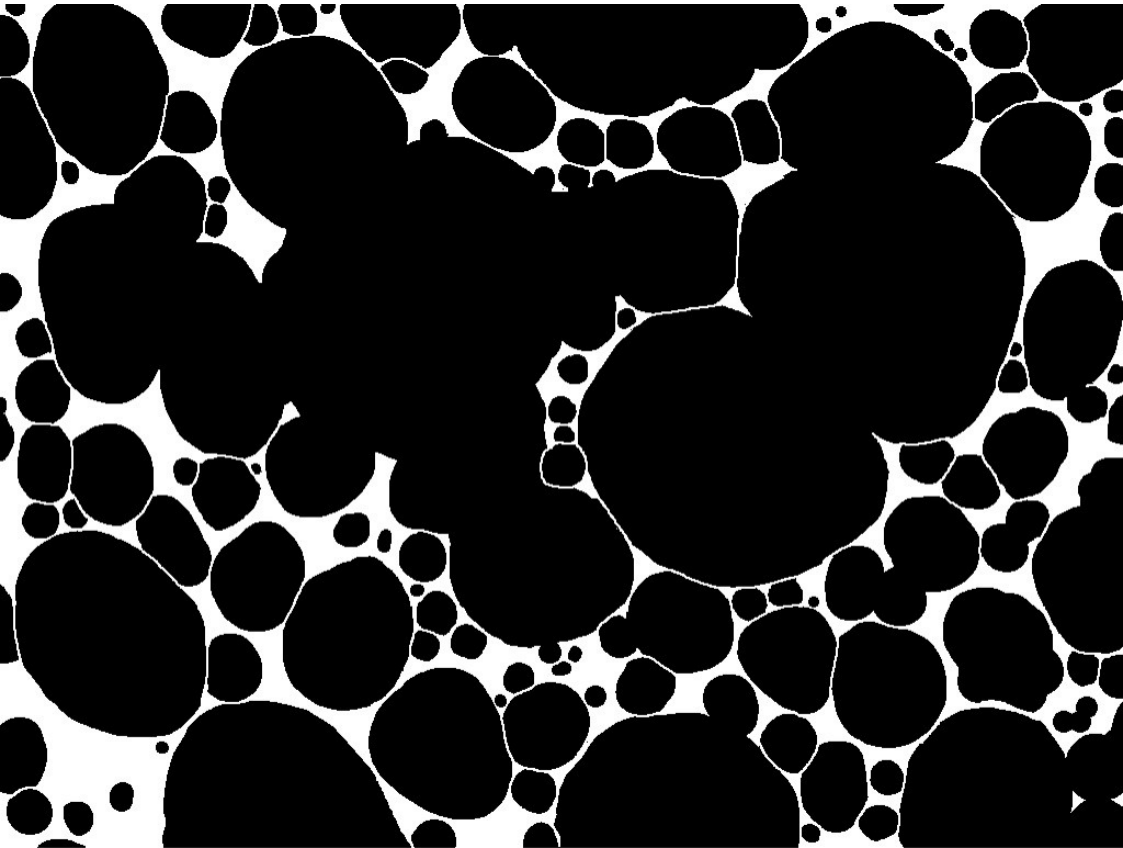
1 mm



Sample GIN8-16 240X (1)

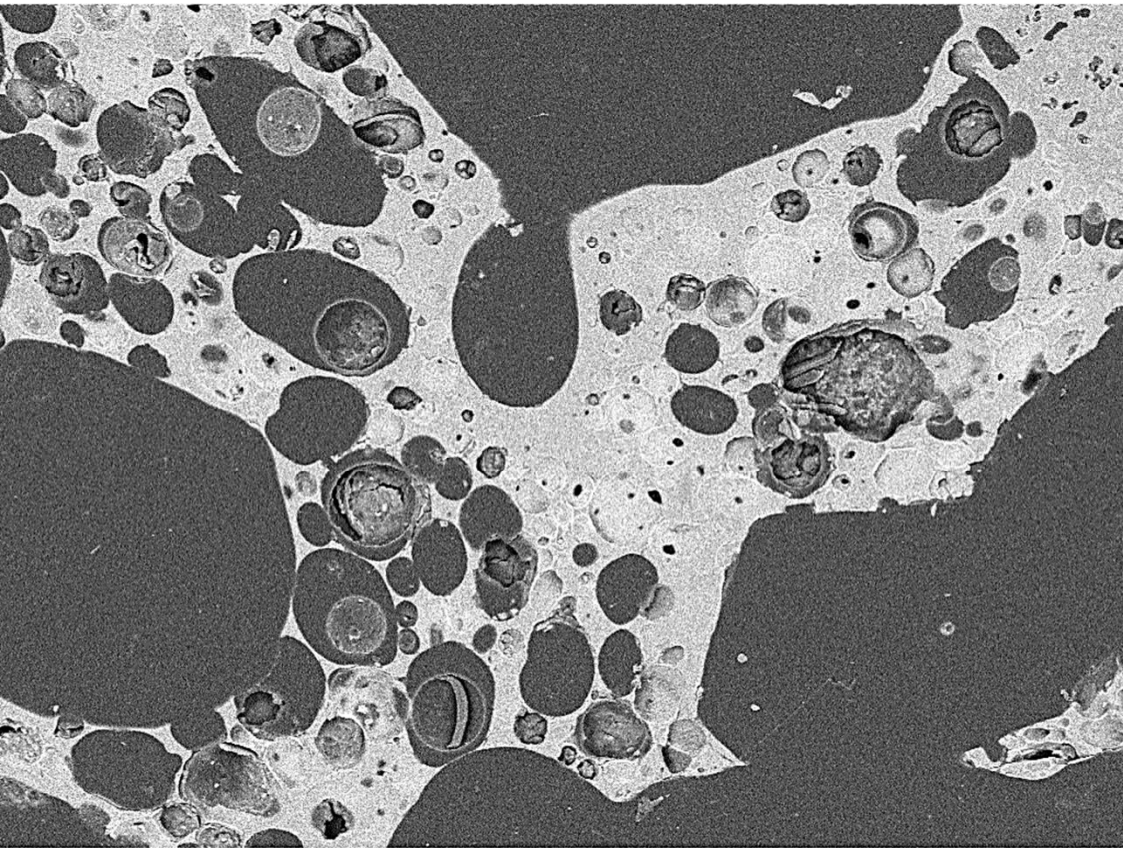


0.5 mm

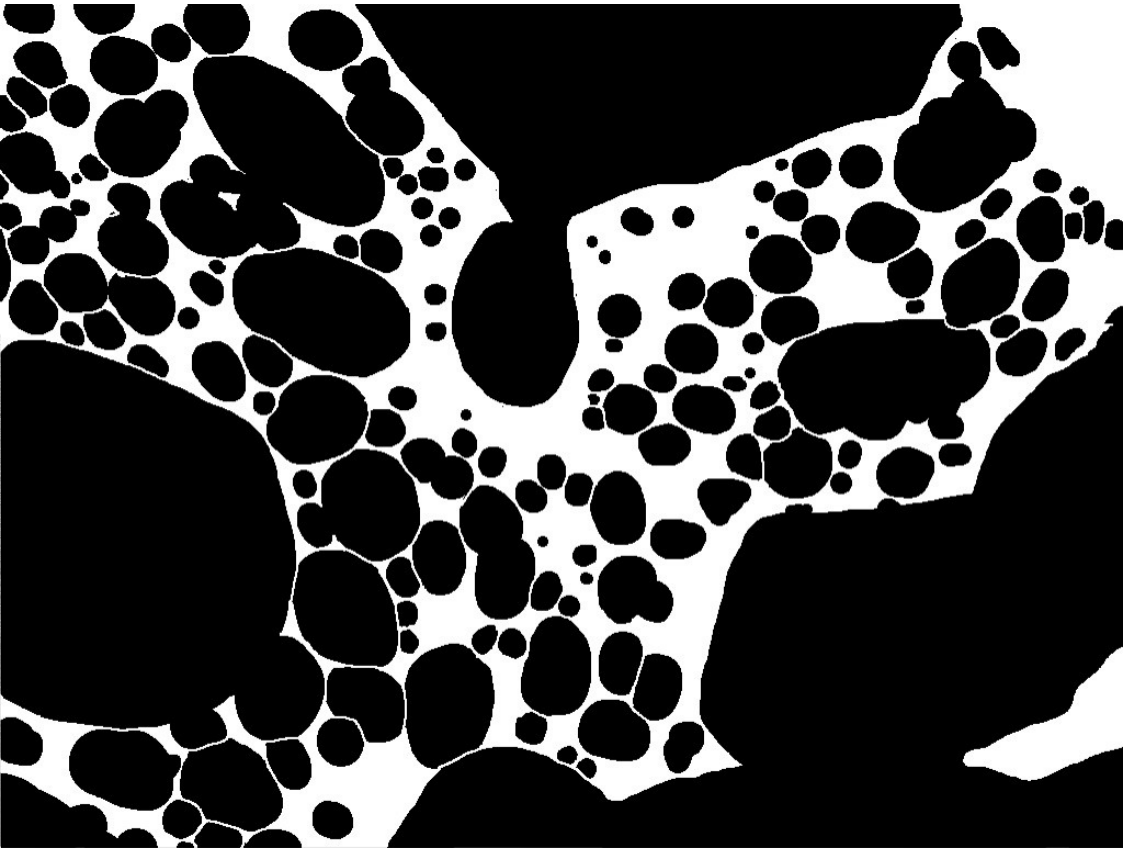


0.5 mm

Sample GIN8-16 240X (2)

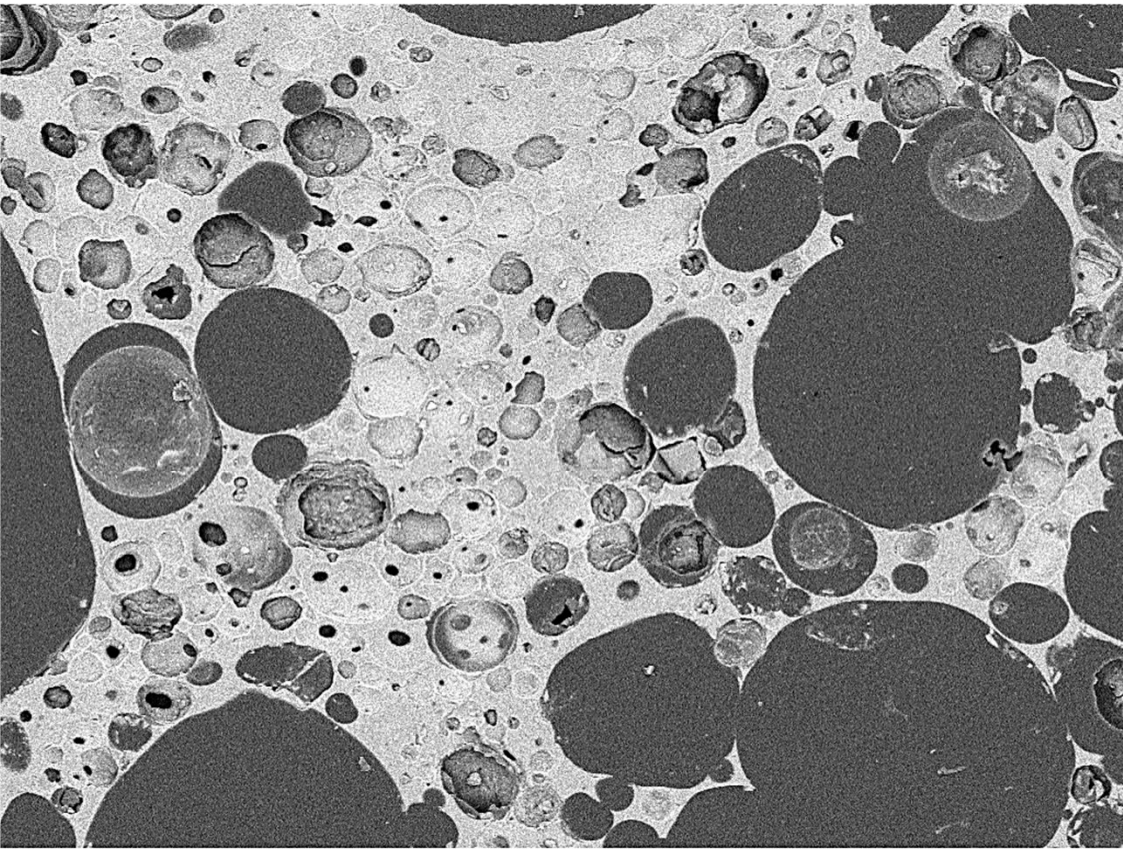


0.5 mm

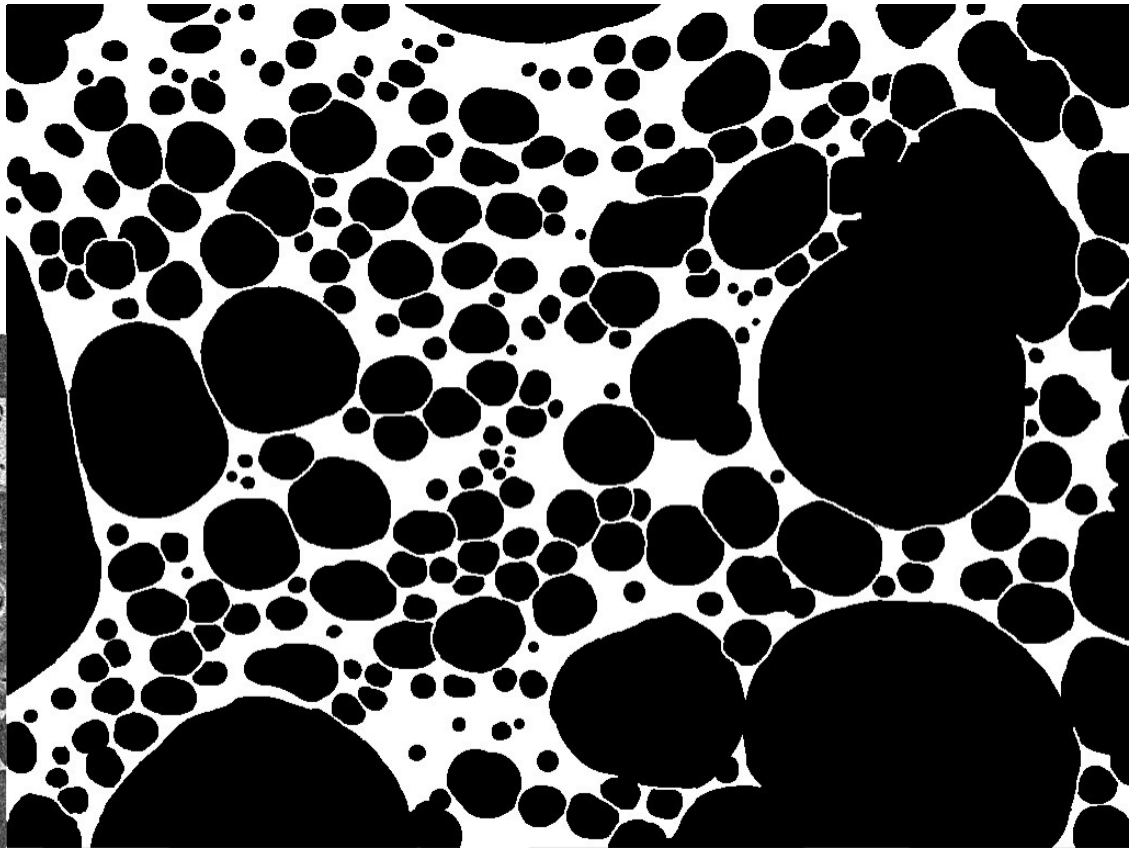


0.5 mm

Sample GIN8-16 240X (3)

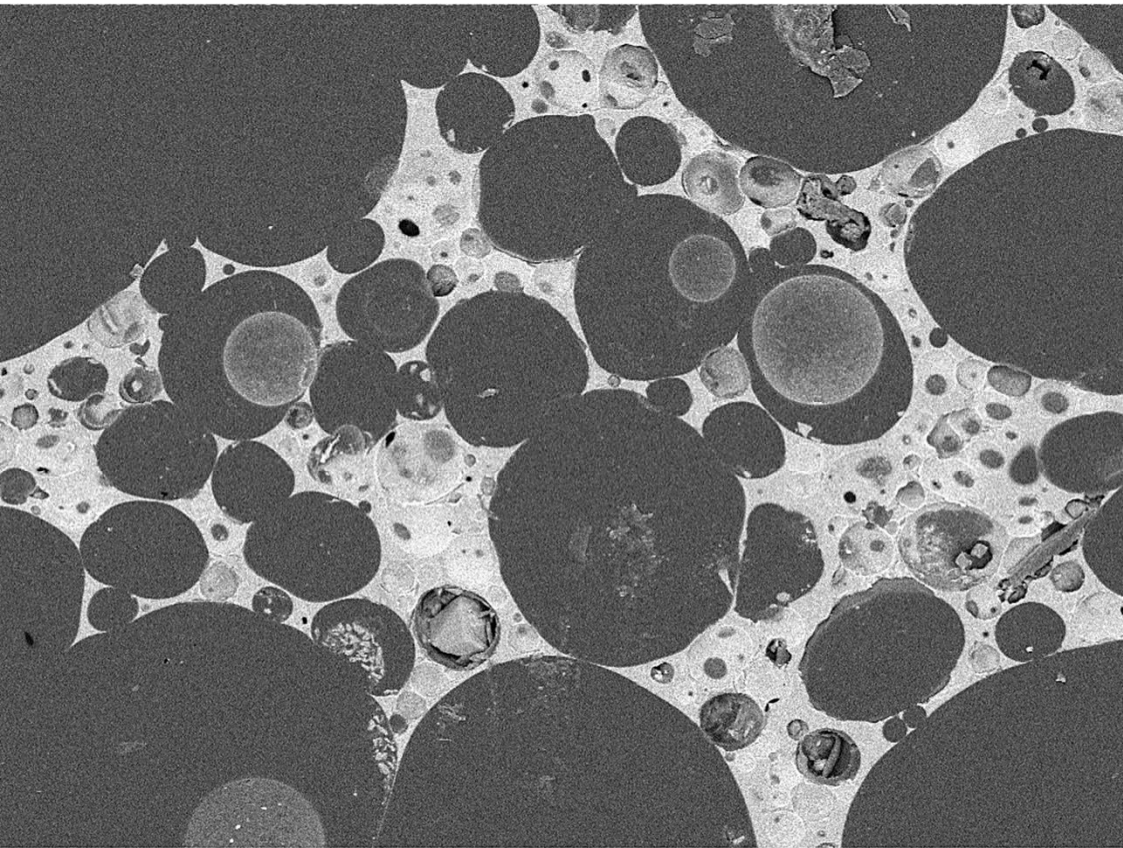


0.5 mm

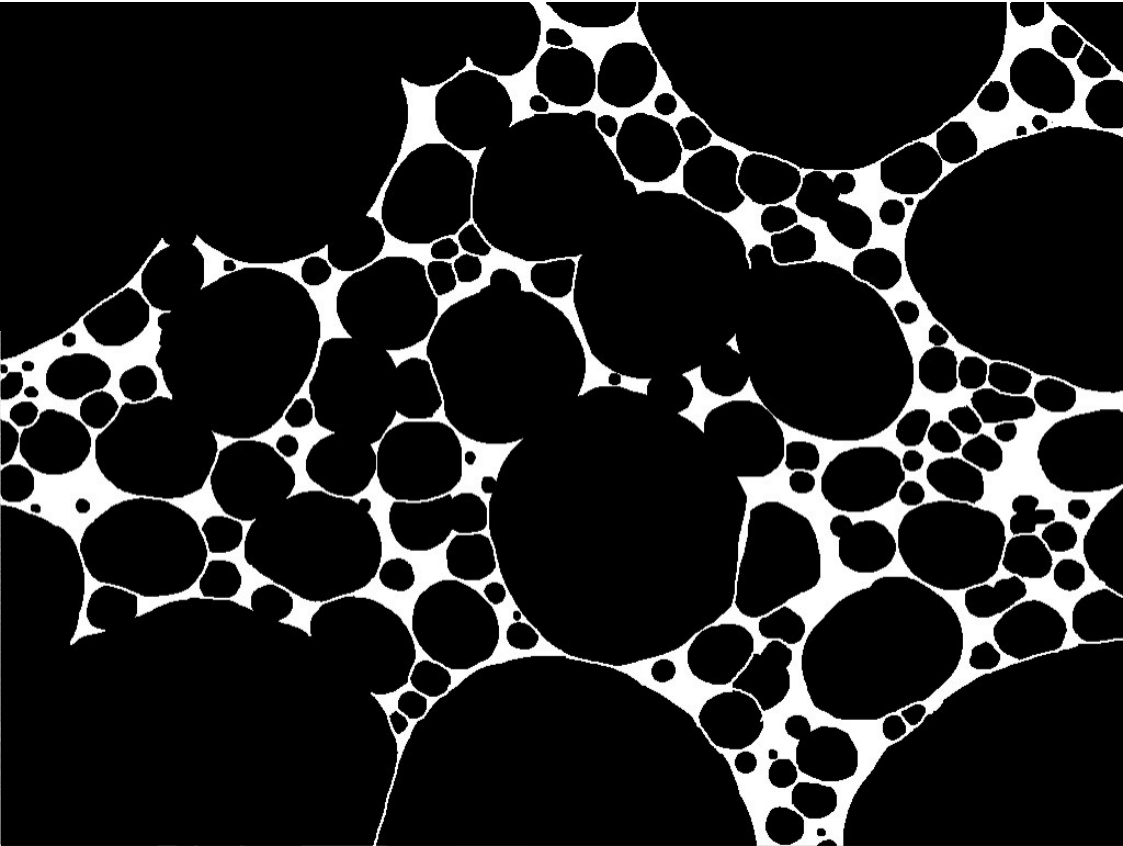


0.5 mm

Sample GIN8-16 240X (4)



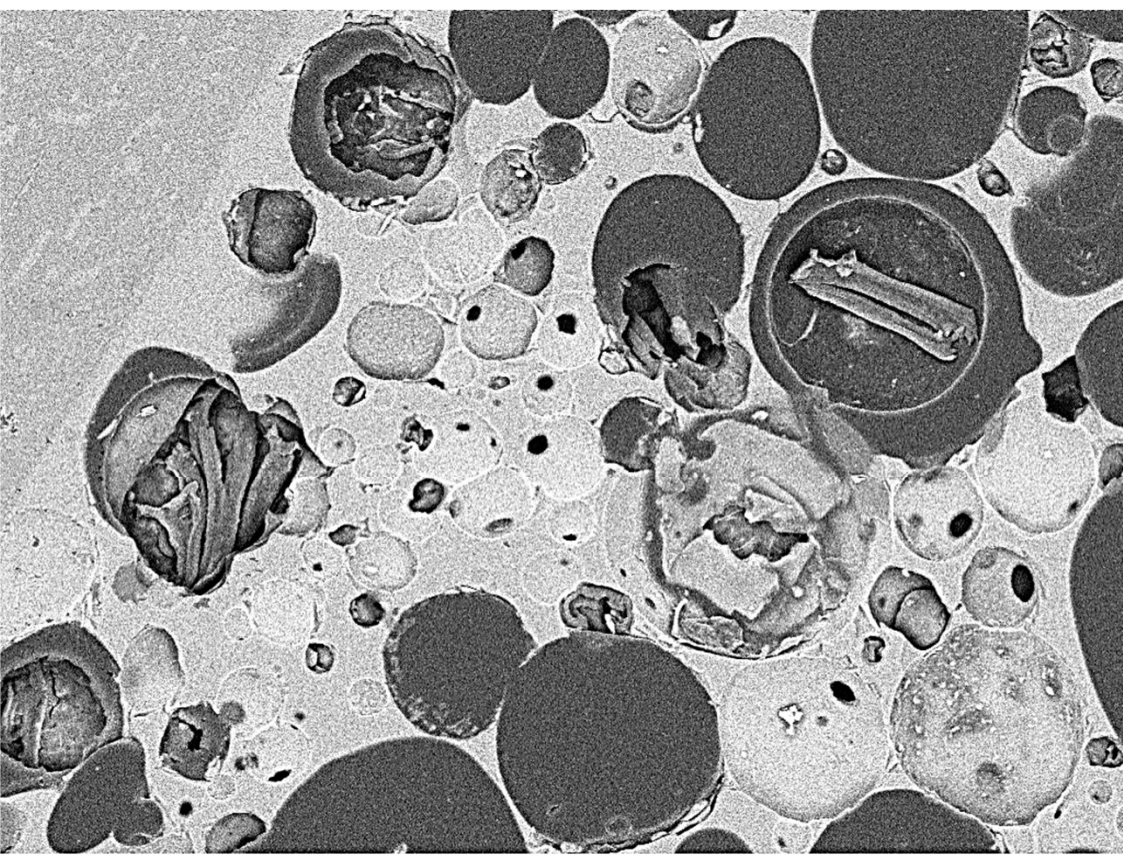
0.5 mm



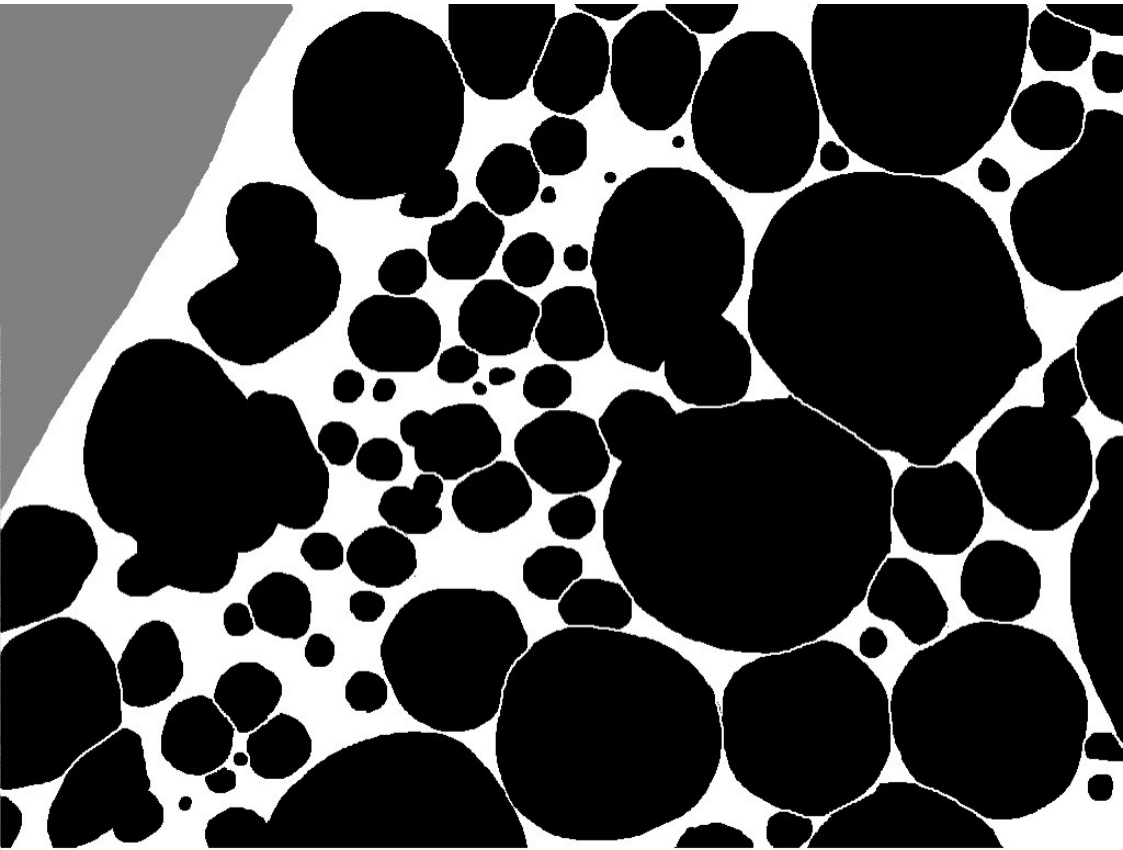
0.5 mm



Sample GIN8-16 480X (1)



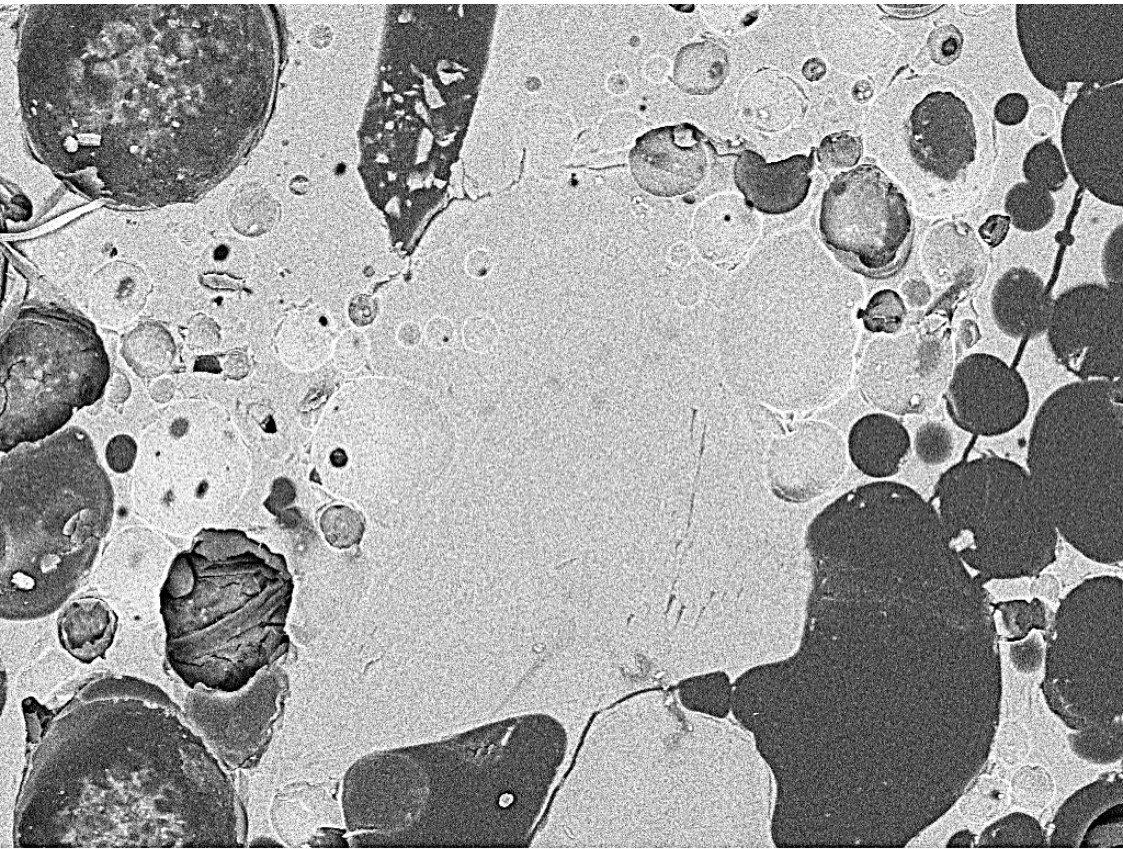
0.5 mm



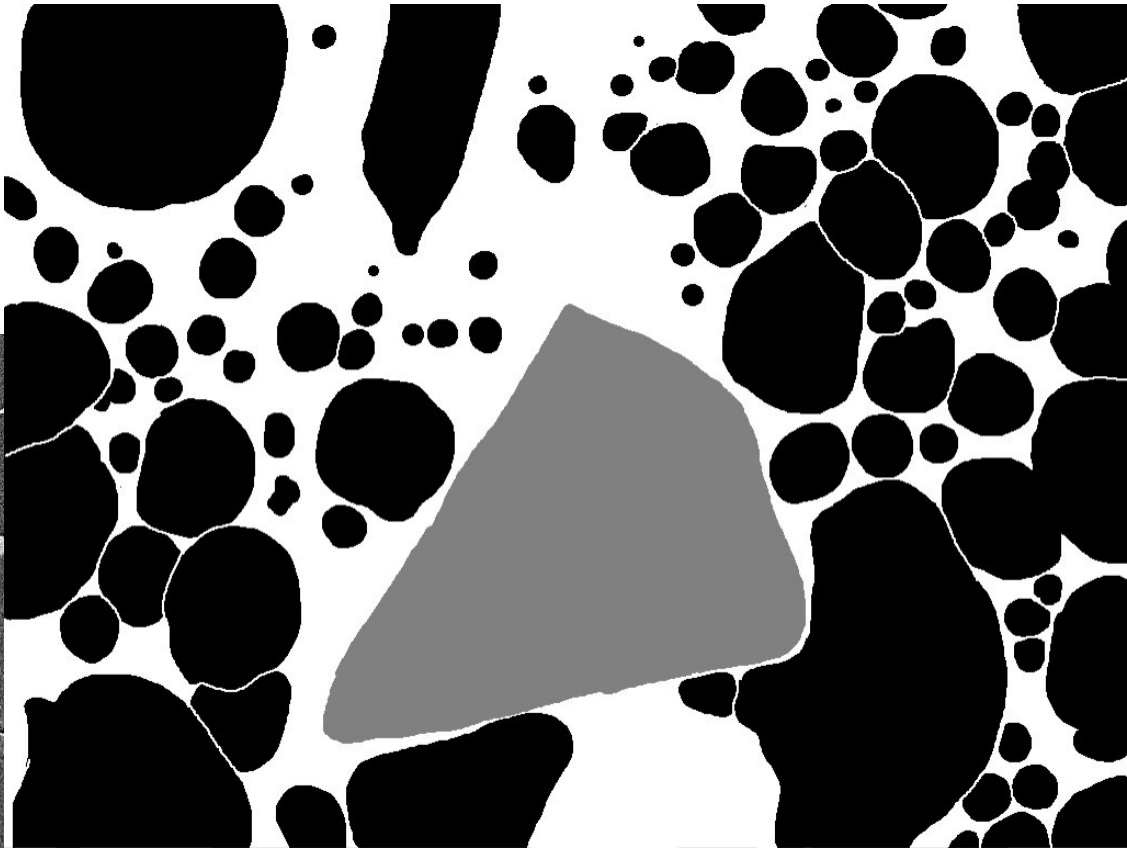
0.5 mm



Sample GIN8-16 480X (2)

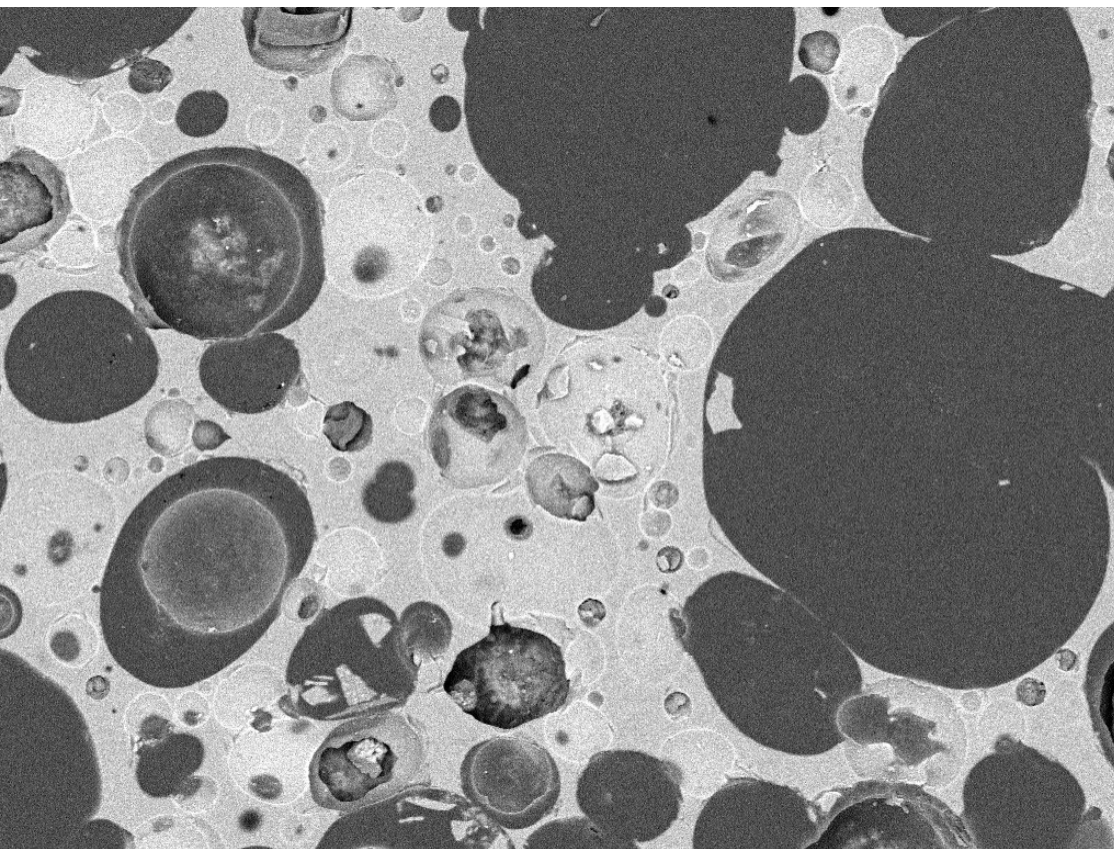


0.5 mm

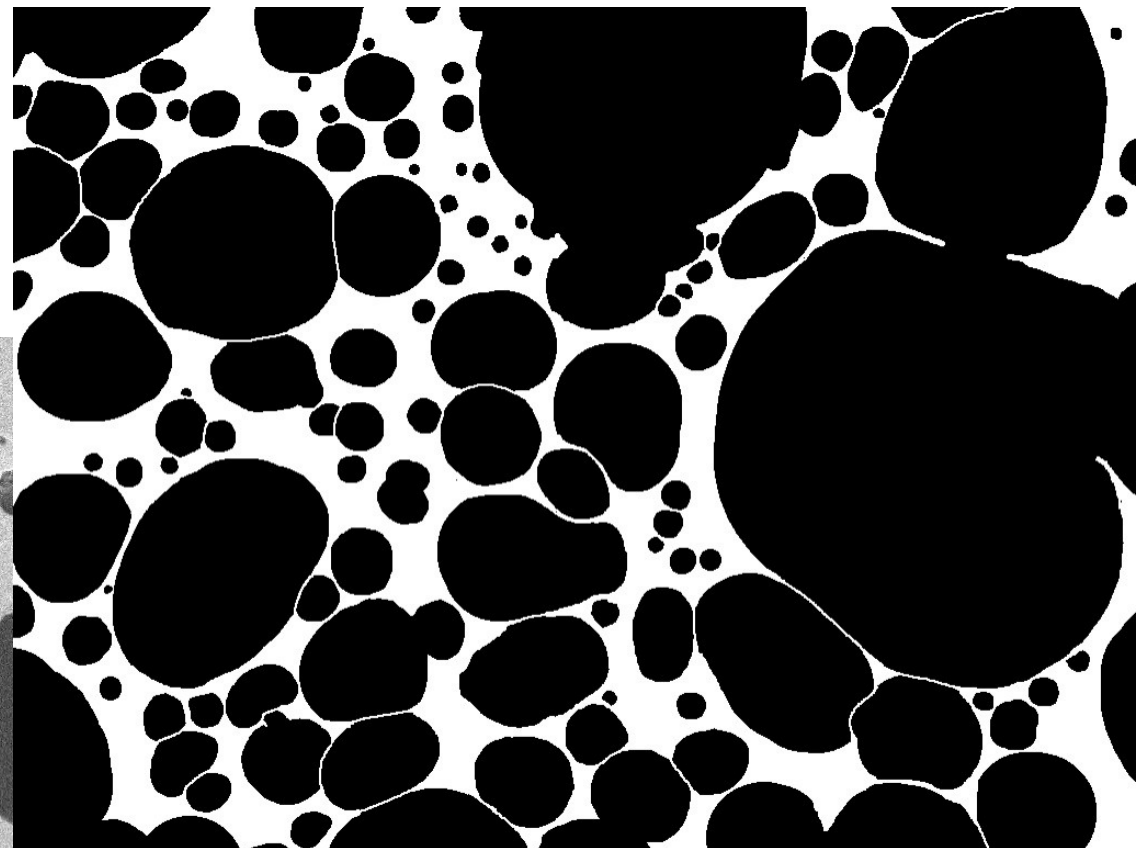


0.5 mm

Sample GIN8-16 480X (3)

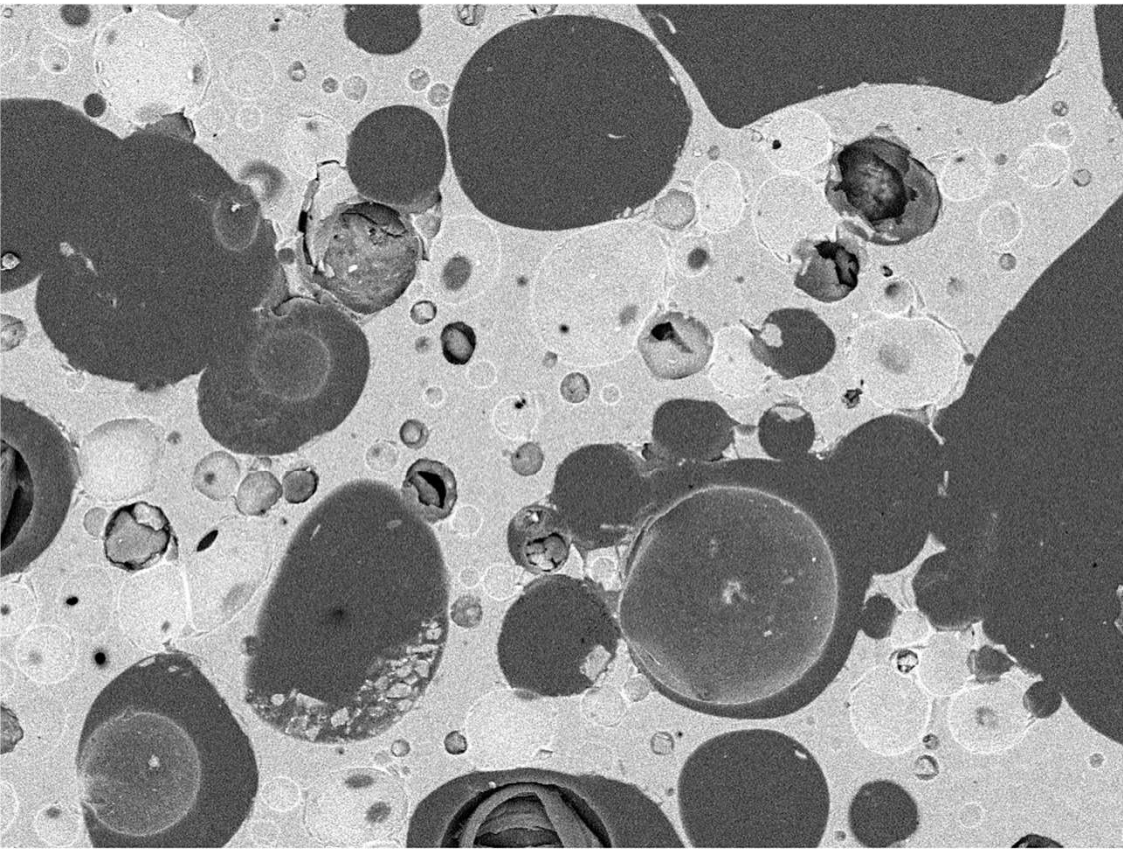


0.5 mm

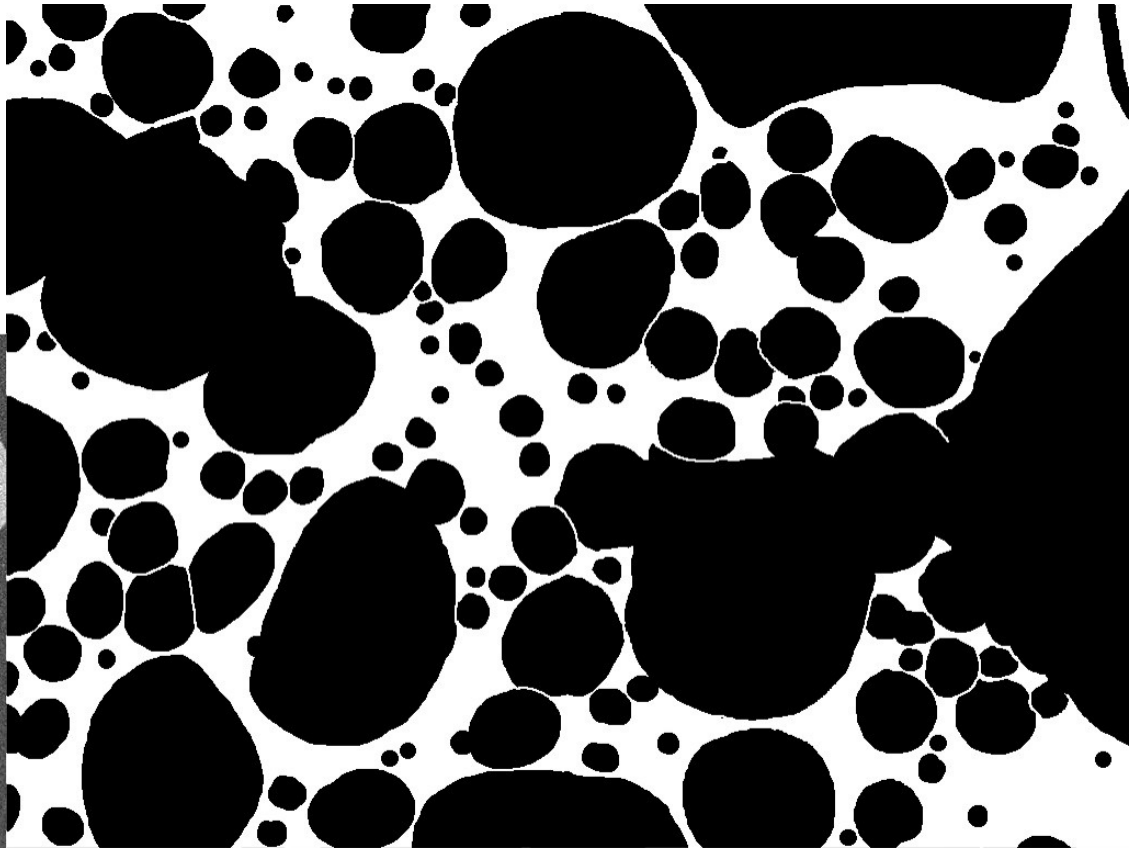


0.5 mm

Sample GIN8-16 480X (4)

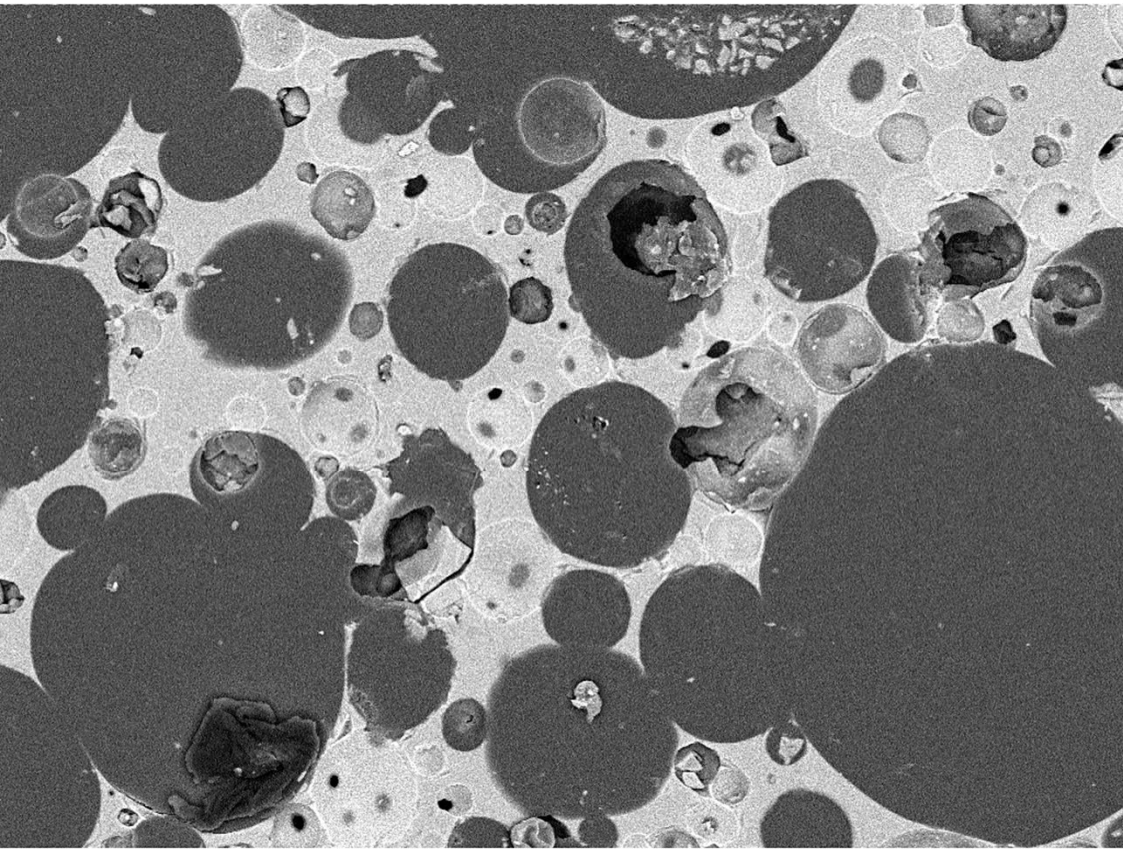


0.5 mm

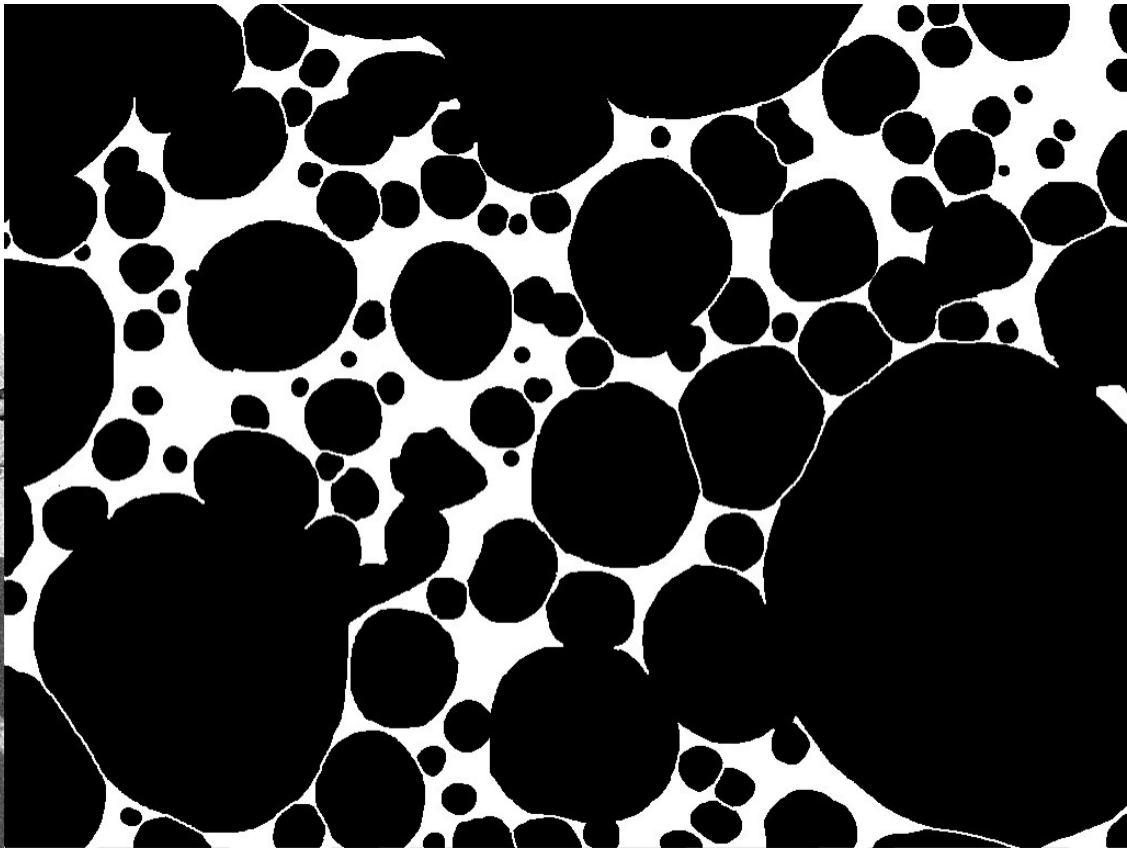


0.5 mm

Sample GIN8-16 480X (5)



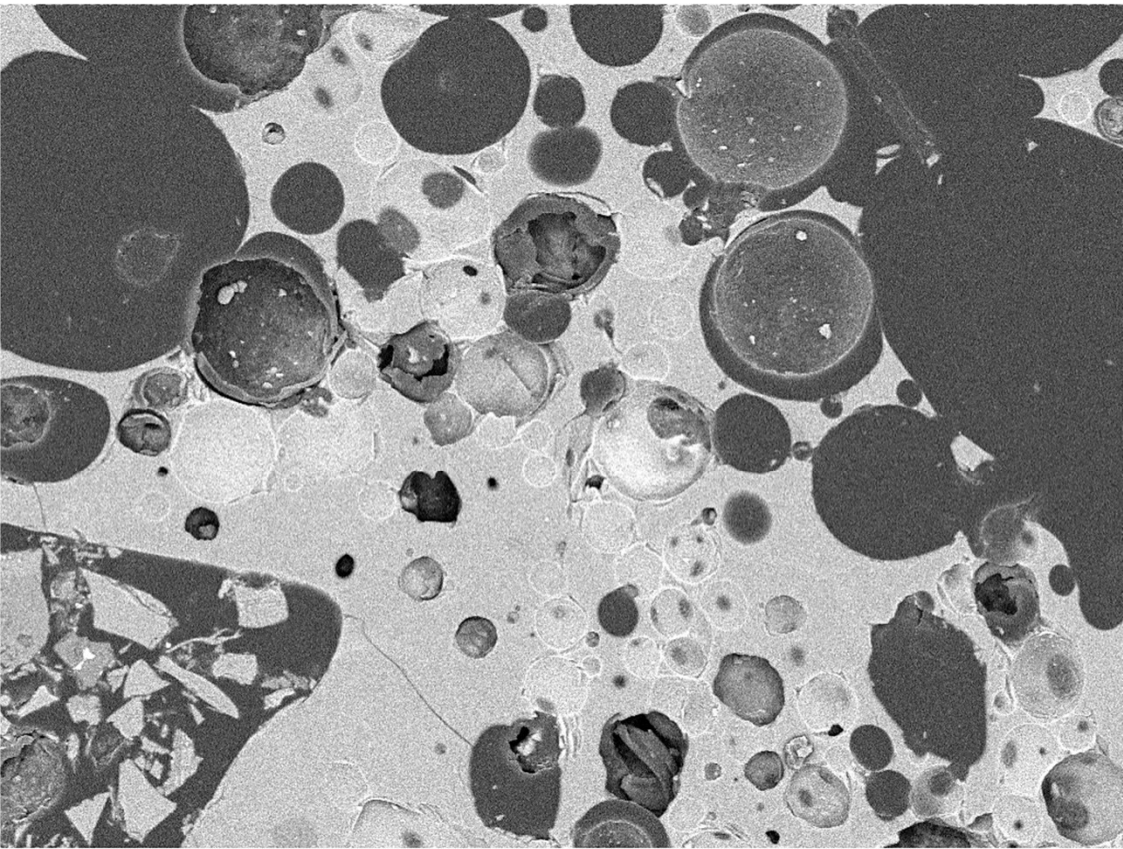
0.5 mm



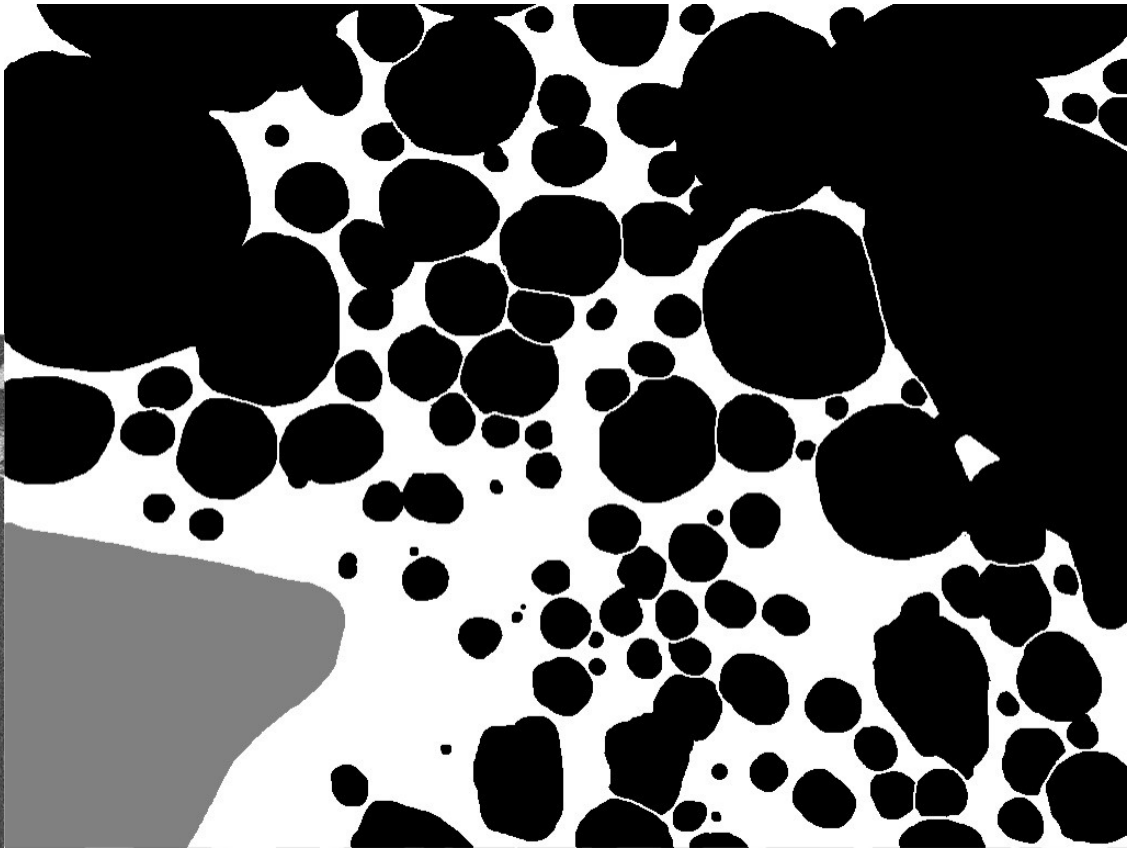
0.5 mm



Sample GIN8-16 480X (6)



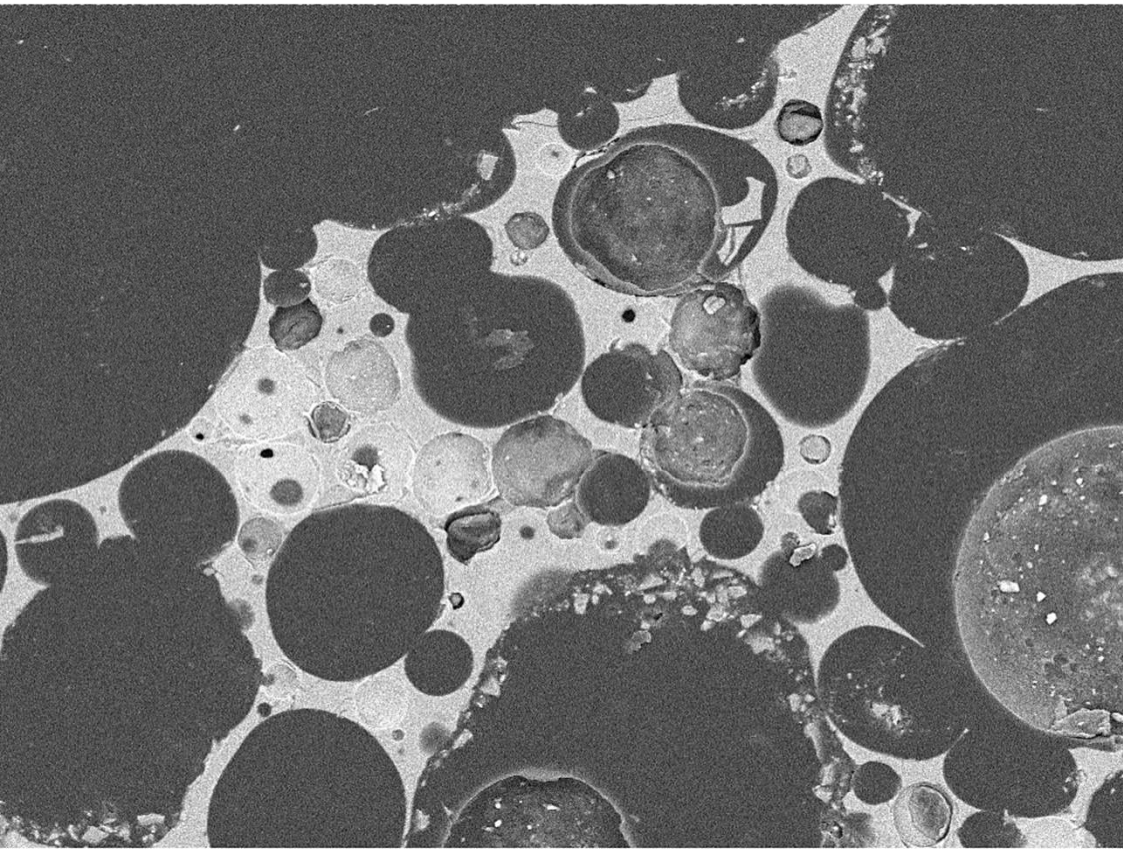
0.5 mm



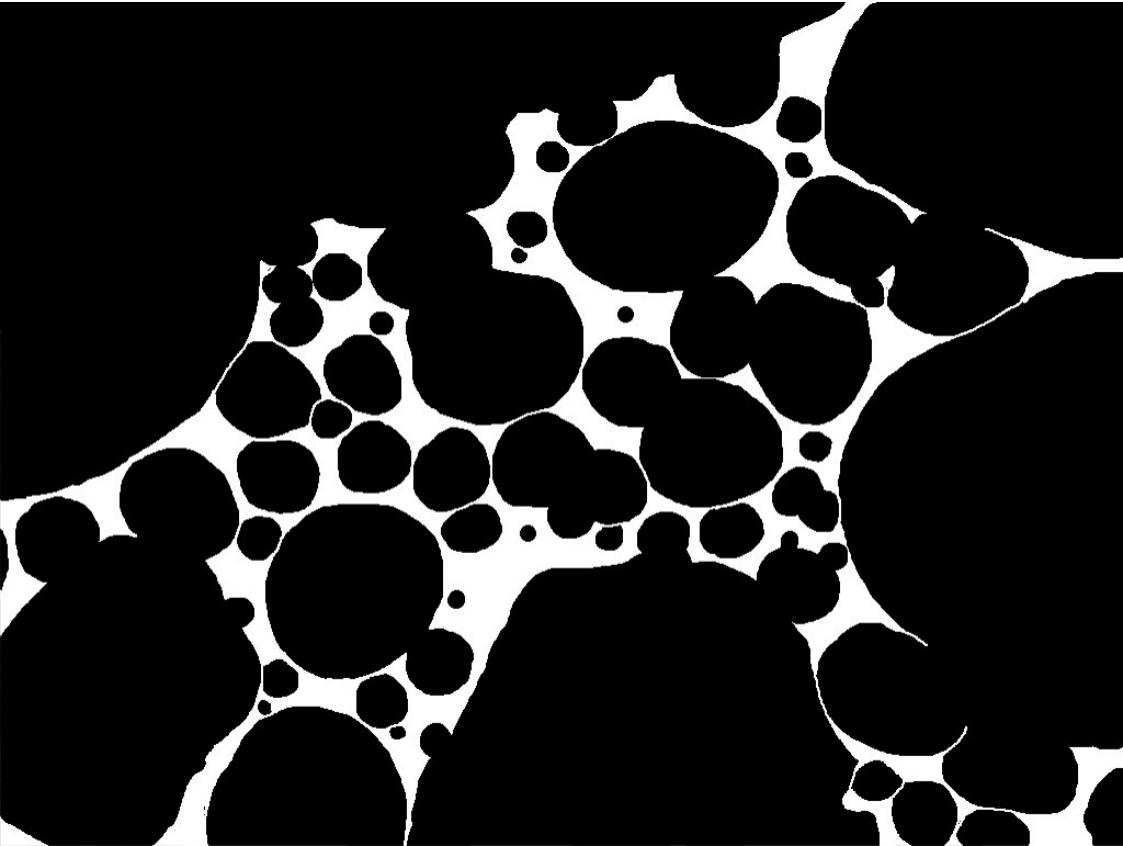
0.5 mm



Sample GIN8-16 480X (7)

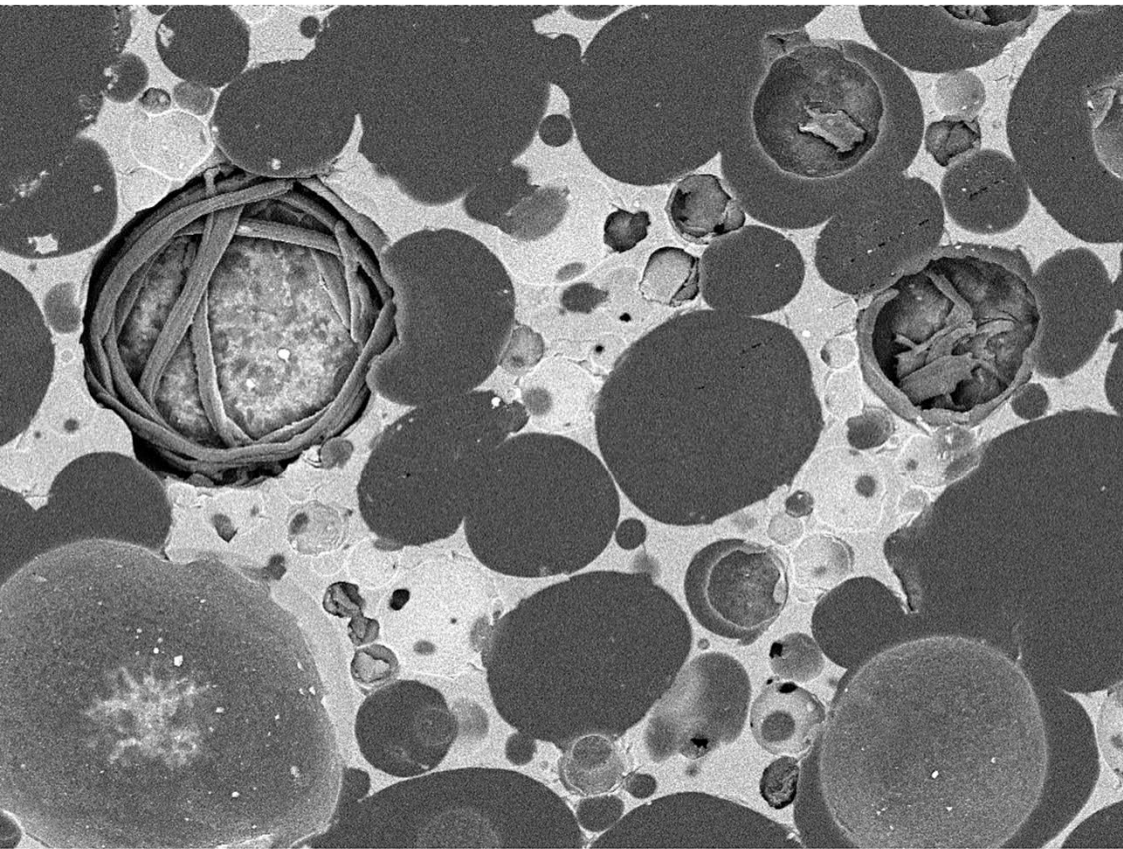


0.5 mm

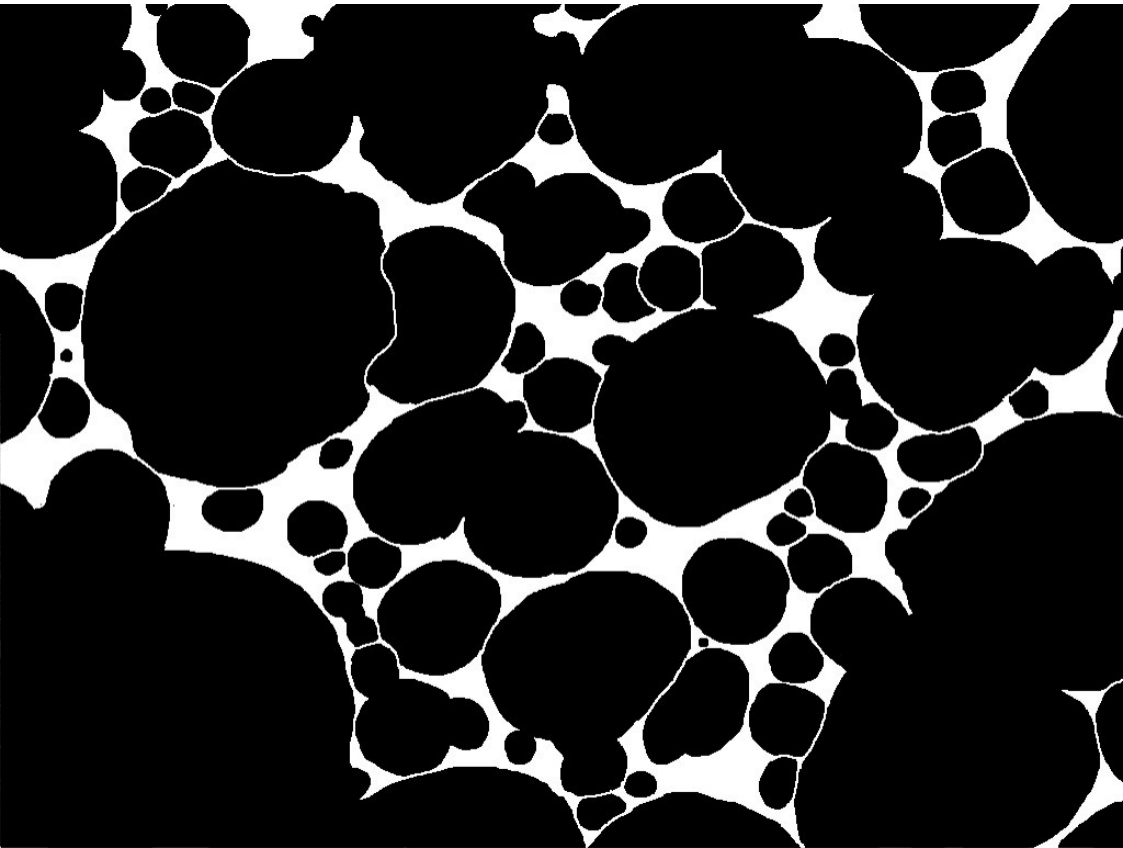


0.5 mm

Sample GIN8-16 480X (8)



0.5 mm



0.5 mm