Modern synchrotron light sources produce high quality X-rays suitable for a wide range of characterisation methods. Some of these, such as X-ray absorption spectroscopy and X-ray diffraction, are widely used in catalysis research. It is less well known in the catalysis community that X-rays can also be applied for so-called ‘chemical imaging’, resolving high quality imaging data in 2D space (X-ray microscopy) and 3D space (X-ray tomography), with a variety of contrast modes. This contribution covers some recent applications of X-ray imaging for catalysis research, including: (i) multiscale imaging of catalysts from micro- to nanoscale; (ii) extending XAS, XRD, and other tools to 2D/3D space; (iii) in situ / operando microscopy and tomography. Chemical imaging will be highlighted as a rapidly developing field in catalysis research, where we as a community have only scratched the surface of potential characterisation methods and applications.

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Alle Interessierten sind herzlich eingeladen.