

Crossing the Disciplinary Boundaries of Physics (Bohr-100 Centennial Celebrations)

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Building molecules and the ingredients for life in space

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Thousands of planets have been discovered around stars other than our Sun. But how and where are these exo-planets born, and why are they so different from those in our own solar system? Which ingredients are available to build them? Thanks to powerful new telescopes, including the James Webb Space Telescope, astronomers can now zoom in to planetary construction sites and study their composition. Water and a surprisingly rich variety of organic materials are found near forming stars, including simple sugars, ethers, alcohols and hydrocarbons. How are these molecules made under the extreme conditions in space and can they be delivered to new planets to form the basis for life elsewhere in the universe?

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