

# Periodic Rigidity of Crystal Bar-Joint Frameworks

Ghada Badri

## **Abstract**

A crystal framework is a bar-joint framework with a full rank translation group and an associated motif of joints and bars.

In 2014, under Prof. Stephen Power's supervision, we showed that the high symmetry of this structure allows us to express the space of supercell  $n$ -fold periodic flexes as the direct sum of the relevant subspaces of phase periodic flexes. The relation also brings together the kernels of the corresponding matrix functions associated with different translation groups.