correlations to achieve superradiance (see the Perspective by Meschede). They dropped prepared atoms into a high-quality optical cavity and found that the number of photons within the cavity built up superradiantly as the atoms dropped through one by one. The method provides a versatile platform for generating nonclassical states of light. —ISO

Science, this issue p. 662; see also p. 641

CARDIOVASCULAR BIOLOGY

Protecting the heart by destabilizing mRNA

The CCR4-NOT complex removes polyadenylate tails from mRNAs that then undergo degradation. Yamaguchi *et al.* found that this complex was required to prevent cardiomyocyte death (see the Focus by Das). Mice deficient in a component of this complex had cardiac dysfunction and died of heart failure. Cardiomyocytes from these mice had less deadenylated *Atg7* mRNA, which resulted in the activation of cell death–associated genes. These results raise the possibility of cardiovascular side effects for autophagy-promoting drugs, which have been explored for the treatment of various diseases. —WW

Sci. Signal. **11**, eaan3638; see also eaar6364 (2018).

MATERIALS SCIENCE

Crystallography of sensitive materials

High-resolution transmission electron microscopy is an invaluable tool for looking at the crystalline structures of many materials. However, the need for high beam doses, especially as a sample is rotated to find the crystal axes, can lead to damage, particularly in fragile materials. Zhang *et al.* combined a state-of-the-art direct-detection electron-counting camera with ways to limit the overall electron dose to analyze delicate materials such as metal organic frameworks. With this approach, they could see the benzene rings in a UiO-66 linker and the coexistence of ligand-free (metal-exposing) and ligand-capped surfaces in UiO-66 crystals. —MSL

Science, this issue p. 675

BIOMECHANICS

Making quick turns

Hummingbirds are well known for their impressive maneuvering during flight. Dakin *et al.* used a computer vision approach to characterize the details of flight in >200 hummingbirds from 25 species (see the Perspective by Wainwright). Larger species had enhanced agility owing to increased muscle mass. In all species, muscles dictated transitional movement, whereas wing shape facilitated sharp turns and rapid rotations. Species, and individuals within species, played on their strengths by combining inherent traits and learned skills. —SNV

Science, this issue p. 653; see also p. 636

QUANTUM OPTICS

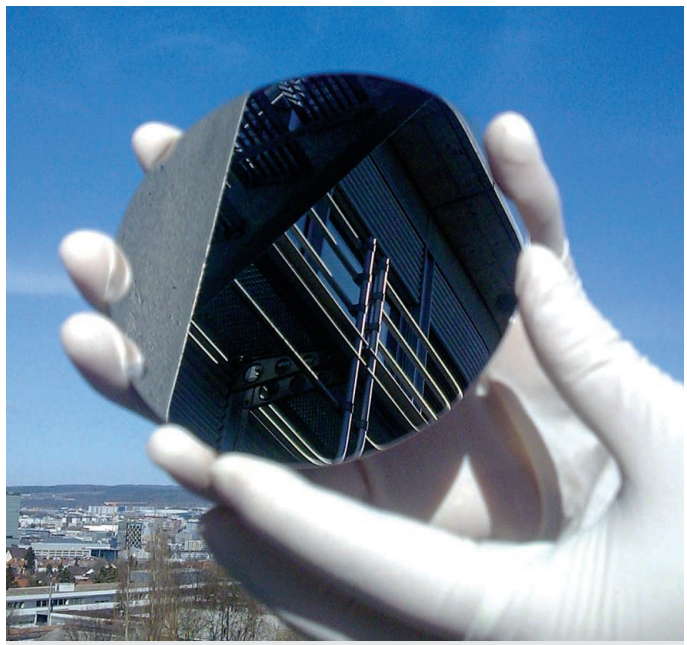
Connecting quantum emitters

Exploiting topological properties of a system allows certain properties to be protected against the disorder and scattering caused by defects. Barik *et al.* demonstrate a strong light-matter interaction in a topological photonic structure (see the Perspective by Amo). They created topological edge states at the interface between two photonic, topologically distinct regions and coupled them to a single quantum emitter. The chiral nature of single-photon emission was used to inject single photons of opposite polarization into counterpropagating topological edge states. Such a topological quantum optics interface may provide a powerful platform for developing robust integrated quantum optical circuits. —ISO

Science, this issue p. 666; see also p. 638

IN OTHER JOURNALS

Edited by **Sacha Vignieri** *and* **Jesse Smith**



Large-area hexagonal boron nitride nanomesh can be grown on a single-crystalline rhodium thin film substrate (shown here).

NANOMATERIALS

Scalable h-BN sheets

Growth of two-dimensional material in situ is a scalable route for device production, especially if the films can be transferred to another substrate. Cun *et al.* grew single crystals of hexagonal boron nitride (h-BN) on ~10-cm rhodium films supported on silicon wafers. After electrochemical treatment with an organic acid and spin-coating with a polymer layer, the h-BN was electrochemically exfoliated by generating hydrogen bubbles at the rhodium surface. These films could be transferred onto a germanium surface to prevent their high-temperature oxidation. Films in which nanovoids had been introduced into h-BN functioned as freestanding membranes after removal of the polymer support. —PDS

Nano Lett. 10.1021/acs.nanolett.7b04752 (2018).

CELL BIOLOGY

Migration without a nucleus

When cells migrate, they normally do so by adopting a characteristic polarized morphology with the nucleus seemingly pushing from behind. The internal cytoskeleton forms well-organized arrays, and the mechanics within the cell, as well as the interactions with the surface on which the cell is moving, are well understood. It has been assumed that the nucleus itself is important for directed migration. Graham *et al.* examined the migration of enucleated mammalian cells and found that the nucleus was dispensable for directed migration, at least along flat surfaces. When it came to migration in three-dimensional (3D) environments, the lack of a nucleus was important. It seems

PHOTO: H. CUN *ET AL.*, *NANO LETT.* 10.1021/ACS.NANOLETT.7B04752 (2018)