



Università
degli Studi di
Messina

DIPARTIMENTO DI SCIENZE BIOMEDICHE,
ODONTOIATRICHE E DELLE IMMAGINI
MORFOLOGICHE E FUNZIONALI



Seminari di Dipartimento BIOMORF – Ciclo 2022/1

Nel quarto ciclo di seminari abbiamo dato spazio ai Visiting Professor e Researcher invitati da membri del Dipartimento. L'obiettivo rimane quello di dare visibilità alla ricerca dipartimentale, in particolare alla sua dimensione internazionale, e di fornire un'occasione di interazione scientifica aperta a tutti i ricercatori dell'Ateneo.

Lunedì 6 giugno 2022, Ore 17.00 – 18.00

Aula Magna "Mario Teti" della Torre Biologica (Pad. G)

PRESENTAZIONE DELL'EVENTO

Prof. Sergio Baldari

(Direttore Dipartimento BIOMORF)

Prof. Andrea d'Avella

(Coordinatore Commissione Ricerca e Terza Missione BIOMORF)

Prof. Giuseppe Pellicane

(Proponente del Visiting Researcher)

RELATORE

Prof. Enrique Lomba – Visiting Researcher

Institute of Physical Chemistry, National Spanish Research Council, Madrid, Spain

Avian retina and stealth materials: what do they have in common?

The distribution of photoreceptors in avian retina is unique among vertebrates and is connected with the extremely accurate sense of vision in birds. Some years ago, it was found that the spatial distribution of each photoreceptor tends to suppress long range density and concentration fluctuations, as it also happens in the case when crystalline order is present. Cone polydispersity frustrates crystallization in bird retina and a compromise solution is found: disordered multihyperuniformity . We will show how disordered hyperuniform patterns lead to optimum space distributions of objects centered around crystal-like conformations. Moreover, certain mathematical properties of these patterns provide a plausible explanation of the excellent performance of bird retina as a photoreceptor device. The anomalous suppression of long range density/concentration fluctuations has also immediate consequences for the scattering of waves/particles. We will see how certain class of material can actually be made invisible for incoming radiation below certain wave numbers , that is they become “stealthy”. Two apparently disconnected properties have an underlying common structural property: disordered hyperuniformity.

Sarà possibile seguire l'evento anche sul Team “Seminari BIOMORF” (codice **r00tueq**)