

NAOMEE: Nucleic Acid Origami Minimal Exchange Format

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Nucleic Acid Origami [1] are 2D or 3D nanostructures, comprised of biological or synthetically derived sequences of nucleic acid bases (DNA, RNA or Hybrid). DNA origami, first proposed by P. Rothemund [1], has seen an explosion of research and applications. Literature describing DNA/RNA Origami often share designs as a list of staple sequences (in Supporting Material) or include more complex details using a variety of available design tools (e.g. cadnano, CanDo, oxDNA, Athena, etc). We present progress towards a curated database of origami, containing origami instances from over 900 papers from the literature, with a minimal information format that includes lab protocols, design details and sequence details for Nucleic Acid Origami nanostructures. Where structures have been modified, we also present ideas of working towards a domain specific Markdown Language, that will allow a minimal representation of the staple and scaffold sequences. When combined, these provide a Minimal Exchange Format for researchers sharing Nucleic Acid Origami designs and experimental details.

[1] <https://www.nature.com/articles/nature04586>