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*Fluorescent probes* of *disease-linked biomarkers* **Impact Areas:** Chemical Biology, Drug Discovery, Nanoscience

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Leveraging underexplored environmental niches for drug discovery

**Impact Areas:** Chemical Biology, Drug Discovery, Energy

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Polymer morphology and characterization

**Impact Areas:** Polymers, Energy, Materials, Sustainability

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Photo- and electro-catalysis in metal-organic frameworks

**Impact Areas:** Energy, Materials, Methodology & Mechanisms, Nanoscience

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Gas surface reaction dynamics

**Impact Areas:** Energy, Materials, Methodology & Mechanisms

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Hybrid electronic materials for energy and sustainability

**Impact Areas:** Energy, Materials

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Drug discovery for obesity, fatty liver disease, multiple sclerosis

**Impact Areas:** Drug Discovery, Chemical Biology, Methodology & Mechanisms

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*Inorganic catalysis for energy applications* **Impact Areas:** Methodology & Mechanisms, Energy, Materials, Sustainability

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Polymer synthesis and structure-property relationships

**Impact Areas:** Polymers, Energy, Materials, Methodology & Mechanisms

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Forefront problems in quantum chemistry and molecular dynamics

**Impact Areas:** Theory & Computation, Energy

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High-performance implementations of electronic structure methods

**Impact Areas:** Theory & Computation, Energy

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Atomistic simulations of condensed-phase systems

Impact **Areas:** Theory & Computation, Chemical

Biology, Energy, Materials

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Intrinsically recyclable polymers from renewable sources

Impact **Areas:** Polymers, Methodology & Mechanisms, Materials, Sustainability

***APPLICATION DEADLINES***

**Dec. 1** - Priority deadline for consideration for fellowships

**Jan. 5** - Final deadline for full consideration

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Asymmetric catalysis and total synthesis of natural products

**Impact Areas:** Methodology & Mechanisms, Chemical Biology

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Quantum chemistry for understanding the universe

**Impact Areas:** Theory & Computation, Drug Discovery, Energy

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Fluoroorganic and fluoropolymer chemistry

**Impact Areas:** Methodology & Mechanisms, Polymers

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Polymer physical and surface chemistry

Impact **Areas:** Polymers, Materials, Nanoscience, Sustainability

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*Polymer synthesis directed by and for biology* **Impact Areas:** Polymers, Chemical Biology, Materials, Methodology & Mechanisms

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Mapping the human metabolome using synthesis and mass spectrometry

**Impact Areas:** Chemical Biology, Drug Discovery, Methodology & Mechanisms

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Discovery of materials electrochemistry for energy and sustainability

**Impact Areas:** Energy, Materials, Nanoscience

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Polymers and composites for energy, water, and catalysis

**Impact Areas:** Materials, Nanoscience, Polymers, Sustainability

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*Synthesis and biosynthesis of antibiotics and*

other natural products

**Impact Areas:** Drug Discovery, Chemical Biology, Methodology & Mechanisms

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Materials for sustainable energy and mechanisms of molecular motion

**Impact Areas:** Energy, Materials, Polymers, Sustainability

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Organic, macromolecular, and supramolecular synthesis

**Impact Areas:** Polymers, Chemical Biology, Materials, Methodology & Mechanisms

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Quantum chemistry methods for renewable energy

Impact **Areas:** Theory & Computation, Energy