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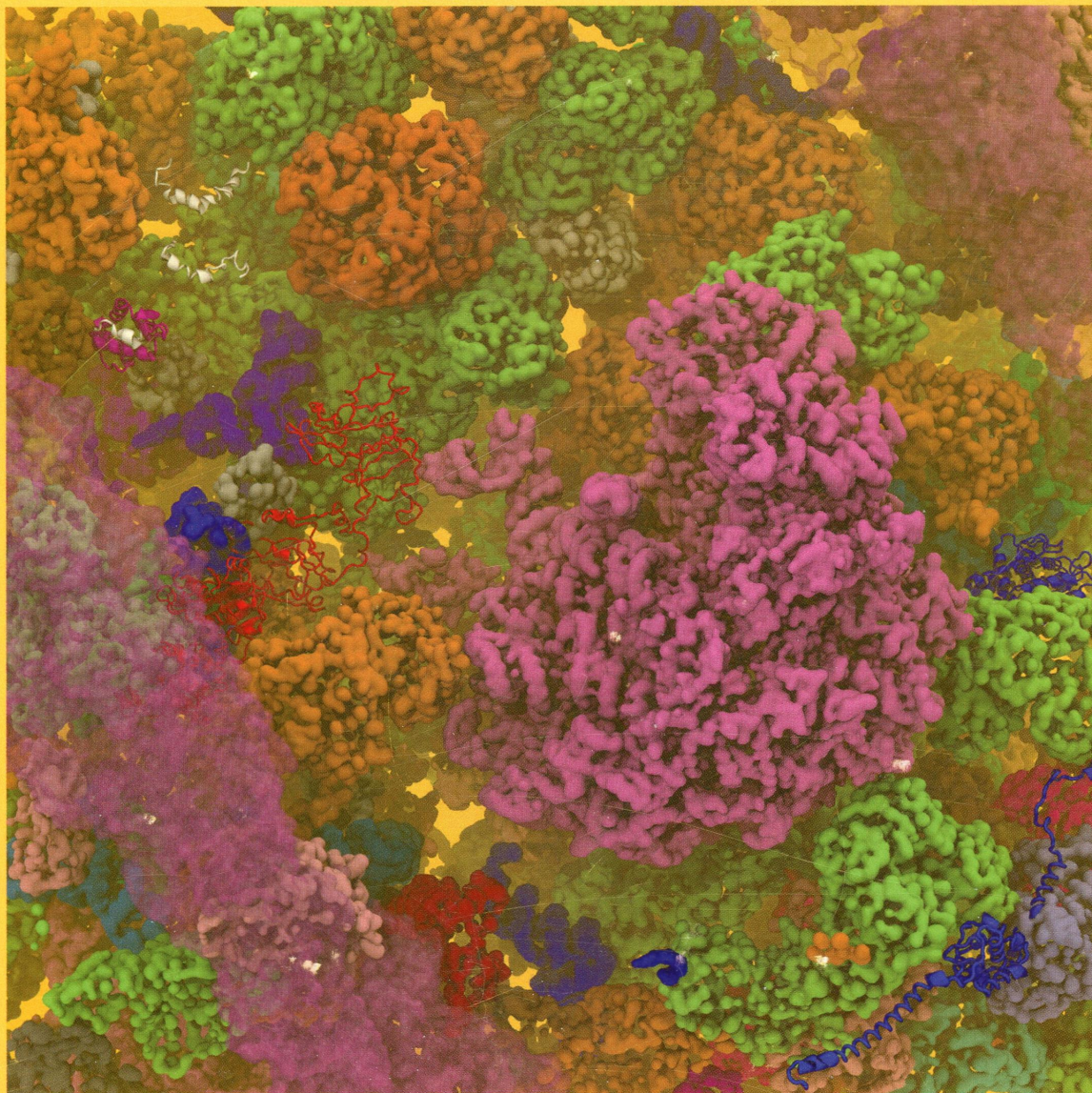
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# THE JOURNAL OF PHYSICAL CHEMISTRY

B



**Crowded Cytosol  
Illustrating Several  
Folding and Binding  
Processes  
(see page 8459)**

**BIOPHYSICAL CHEMISTRY, BIOMATERIALS, LIQUIDS, AND SOFT MATTER**



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**ON THE COVER:** Crowded cytosol illustrating several folding and binding processes. The crowded mammalian cytosol and protein dynamics: the cytosol contains diverse microenvironments that can modulate the dynamics of proteins by specific contacts, weak “quinary” interactions and crowding (excluded volume). This modulation affects the protein folding processes of proteins such as the enzyme PGK (red ribbon), the cell cycle proteins p53 (white ribbons) and Nmd2 (purple ribbon), and the extracellular model protein VlsE (blue ribbons). PGK stability increases upon cytosolic macromolecular crowding. The in vitro disordered Nterminus of p53 may gain structure by crowding in the presence of nonspecific interactions in the cytoplasm or by binding to its inhibitor Nmd2. VlsE did not evolve for folding in the mammalian cytosol and is destabilized there relative to in vitro. Cover art prepared by Taras Pogorelov. See page 8459.

## Feature Article

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[dx.doi.org/10.1021/jp501866v](http://dx.doi.org/10.1021/jp501866v)

**Protein Folding Dynamics in the Cell**  
Irisbel Guzman and Martin Gruebele\*

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[dx.doi.org/10.1021/jp412045m](http://dx.doi.org/10.1021/jp412045m)

**Tryptophan and ATTO 590: Mutual Fluorescence Quenching and Exciplex Formation**  
Ujjal Bhattacharjee, Christie Beck, Arthur Winter, Carson Wells, and Jacob W. Petrich\*

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[dx.doi.org/10.1021/jp501399k](http://dx.doi.org/10.1021/jp501399k)

**Molecular Dynamics Study of the Controlled Destabilization of an RNA Hairpin Structure by a Covalently Attached Azobenzene Switch**  
Dominique Rastädter, Mithun Biswas, and Irene Burghardt\*

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[dx.doi.org/10.1021/jp501950d](http://dx.doi.org/10.1021/jp501950d)


**A Hydrodynamic Comparison of Solution and Gas Phase Proteins and Their Complexes**  
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[dx.doi.org/10.1021/jp502505c](http://dx.doi.org/10.1021/jp502505c)

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**Peptide Bond Formation via Glycine Condensation in the Gas Phase**

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**Viscosity Heterogeneity inside Lipid Bilayers of Single-Component Phosphatidylcholine Liposomes Observed with Picosecond Time-Resolved Fluorescence Spectroscopy**

Yuki Nojima and Koichi Iwata\*

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**Interaction of Bovine Serum Albumin (BSA) with Novel Gemini Surfactants Studied by Synchrotron Radiation Scattering (SR-SAXS), Circular Dichroism (CD), and Nuclear Magnetic Resonance (NMR)**

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[dx.doi.org/10.1021/jp5045332](https://doi.org/10.1021/jp5045332)**Effect of the Hydrophobic Alcohol Chain Length on the Hydrogen-Bond Network of Water**

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[dx.doi.org/10.1021/jp504999f](https://doi.org/10.1021/jp504999f)**Photoisomerization Dynamics and Pathways of *trans*- and *cis*-Azobenzene in Solution from Broadband Femtosecond Spectroscopies and Calculations**

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[dx.doi.org/10.1021/jp505051v](https://doi.org/10.1021/jp505051v)**Physicochemical Properties of Three Ionic Liquids Containing a Tetracyanoborate Anion and Their Lithium Salt Mixtures**

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[dx.doi.org/10.1021/jp505237s](https://doi.org/10.1021/jp505237s)**Solvation of CO<sub>2</sub> in Water: Effect of RuBP on CO<sub>2</sub> Concentration in Bundle Sheath of C<sub>4</sub> Plants**

Tumpa Sadhukhan, Iqbal A. Latif, and Sambhu N. Datta\*

**Glasses, Colloids, Polymers, and Soft Matter**

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[dx.doi.org/10.1021/jp501264h](https://doi.org/10.1021/jp501264h)**Characteristic Coordination Structure around Nd Ions in Sol–Gel-Derived Nd–Al-Codoped Silica Glasses**

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[dx.doi.org/10.1021/jp5024718](https://doi.org/10.1021/jp5024718)**Molecular Dynamics Simulations of Water Permeation across Nafion Membrane Interfaces**

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[dx.doi.org/10.1021/jp502580a](https://doi.org/10.1021/jp502580a)**Mesoscopic Structures of Triglyceride Nanosuspensions Studied by Small-Angle X-ray and Neutron Scattering and Computer Simulations**

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[dx.doi.org/10.1021/jp502953y](https://doi.org/10.1021/jp502953y)**Interaction of Astramol Poly(propyleneimine) Dendrimers with DNA and Poly(methacrylate) Anion in Water and Water–Salt Solutions**

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- 8827  [dx.doi.org/10.1021/jp5040618](https://doi.org/10.1021/jp5040618)  
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## Additions and Corrections

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[dx.doi.org/10.1021/jp505983p](https://doi.org/10.1021/jp505983p)

Correction to "Molecular Simulations Indicate Marked Differences in the Structure of Amylin Mutants, Correlated with Known Aggregation Propensity"

Cayla Miller, Gül H. Zerze, and Jeetain Mittal\*

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[dx.doi.org/10.1021/jp506242u](https://doi.org/10.1021/jp506242u)

Correction to "Effect of Ionic Aqueous Environments on the Structure and Dynamics of the A $\beta$ <sub>21–30</sub> Fragment: A Molecular-Dynamics Study"

Micholas Dean Smith and Luis Cruz\*