

A Novel Green Chemistry Gelation Method for Polyvinyl Pyrrolidone (PVP) and Dimethylpolysiloxane (Silicone): Microwave-induced in-liquid-plasma

Satoshi Horikoshi,^{a*} Seiya Sawada,^a and Nick Serpone^b

^a Department of Materials and Life Sciences, Faculty of Science and Technology, Sophia University, 7-1 Kioicho, Chiyodaku, Tokyo 102-8554, Japan

^b PhotoGreen Laboratory, Dipartimento di Chimica, Università di Pavia, Via Taramelli 12, Pavia 27100, Italia.

Supplementally Table and Figures

Table S1 Toxicity for LD₅₀ (lethal dose 50) of initiators, crosslinkers and organic solvents [ref. 1]

	Major chemicals	LD ₅₀ (rat) / mg kg ⁻¹
Crosslinker	N-methylenebisacrylamide	1390
	Ethylene glycol dimethacrylate	3300
Initiator	Azobisisobutyronitrile	100
	Benzoyl peroxide	7710

Ref. 1: M. Hirata, Latest water-soluble polymers, J. Jpn. Soc. Colour Mater., 1976, 49, 355-363.

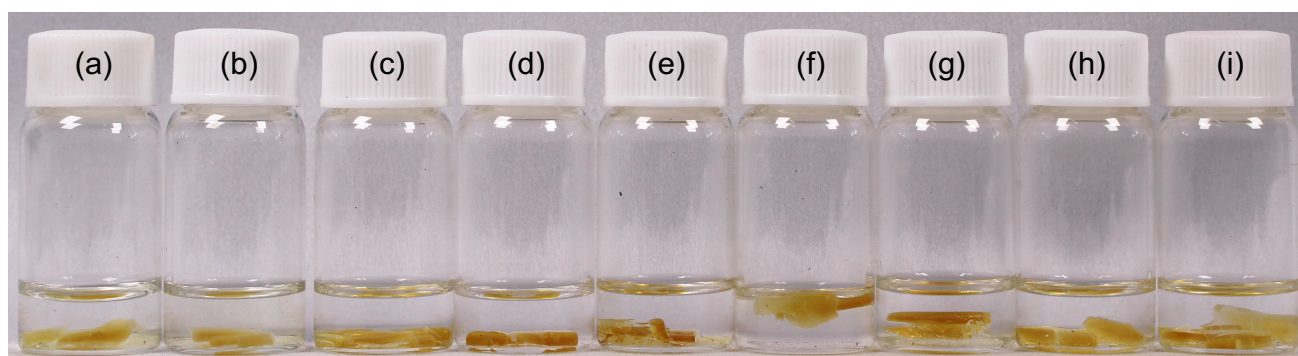


Figure S1. Photograph of in 9 kinds of solvents for a PVP gel generated by 5 min of microwave-induced plasma-in-liquid (MPL). Addition to ((a) water, (b) methanol, (c) ethanol, (d) acetone, (e) hexane, (f) chloroform, (g) dimethylformamide, (h) dimethylacetamide, and (i) tetrahydrofuran).

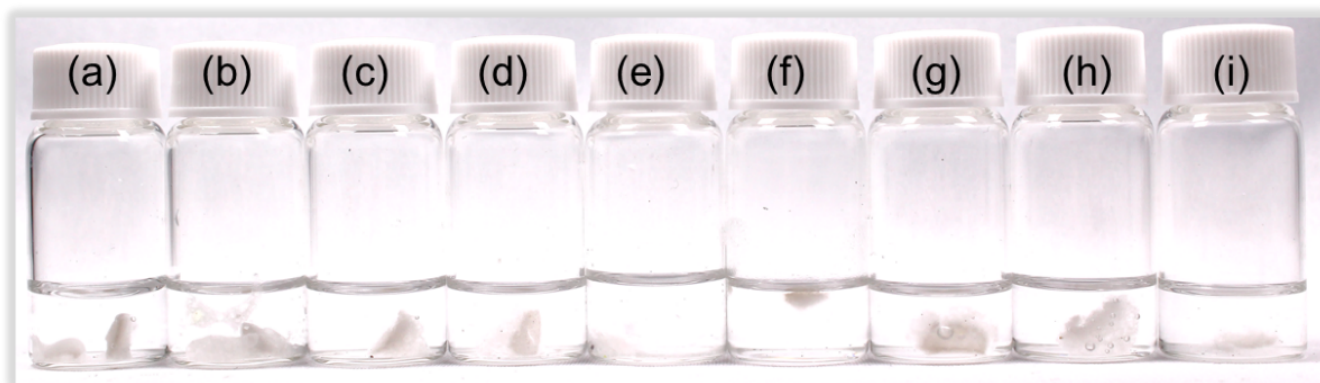


Figure S2. Photograph of in 9 kinds of solvents for a Silicone gel generated by 5 min of microwave-induced plasma-in-liquid (MPL). Addition to ((a) water, (b) methanol, (c) ethanol, (d) acetone, (e) hexane, (f) chloroform, (g) dimethylformamide, (h) dimethylacetamide, and (i) tetrahydrofuran).