

Dr Remzi Becer

BSc, MSc, PhD, CChem

School of Engineering and Materials Science
Queen Mary University of London
Mile End Road
London E1 4NS

tel: +44 (0)20 7882 6534

email: r.becer@qmul.ac.uk web: www.sems.qmul.ac.uk/r.becer

2018

Guided Cell Attachment via Aligned Electrospinning of Glycopolymers.

Liu R, Becer CR and Screen HRC. *Macromolecular Bioscience* vol. 18, (12).

Thioester functional polymers.

Aksakal S, Aksakal R and Becer CR. *Polymer Chemistry* vol. 9, (36) 4507-4516.

Hybrids of Silica/Poly(caprolactone coglycidoxypopyl trimethoxysilane) as Biomaterials.

Sang T, Li S, Ting HK, Stevens MM, Becer CR and Jones JR. *Chemistry of Materials* vol. 30, (11) 3743-3751.

2017

The effect of linker length on ConA and DC-SIGN binding of: S -glucosyl functionalized poly(2-oxazoline)s.

Yilmaz G, Uzunova V, Hartweg M, Beyer V, Napier R and Becer CR. *Polymer Chemistry* vol. 9, (5) 611-618.

Ugi multicomponent reaction to prepare peptide-peptoid hybrid structures with diverse chemical functionalities.

Hartweg M, Edwards-Gayle CJC, Radvar E, Collis D, Reza M, Kaupp M, Steinkoenig J, Ruokolainen J, Rambo R, Barner-Kowollik C, Hamley IW, Azevedo HS and Becer CR. *Polymer Chemistry* vol. 9, (4) 482-489.

Sequence and Architectural Control in Glycopolymer Synthesis.

Abdouni Y, Yilmaz G and Becer CR. *Macromolecular Rapid Communications* vol. 38, (24).

Sequence Controlled Polymers from a Novel β -Cyclodextrin Core.

Abdouni Y, Yilmaz G and Becer CR. *Macromol Rapid Commun* vol. 38, (24).

Tailored Modification of Thioacrylates in a Versatile, Sequence-Defined Procedure.

Holloway JO, Aksakal S, Du Prez FE and Becer CR. *Macromol Rapid Commun*.

Manipulation of cytokine secretion in human dendritic cells using glycopolymers with picomolar affinity for DC-SIGN.

Mitchell DA, Zhang Q, Voorhaar L, Haddleton DM, Herath S, Gleinich AS, Randeva HS, Crispin M, Lehnert H, Wallis R, Patterson S and Becer CR. *Chemical Science* vol. 8, (10) 6974-6980.

A2B-Miktoarm Glycopolymer Fibers and Their Interactions with Tenocytes.

BECER CR, Screen HRC, Patel D and Liu R. *Bioconjugate Chemistry*. American Chemical Society.

Block-Sequence-Specific Glycopolypeptides with Selective Lectin Binding Properties.

Lavilla C, Yilmaz G, Uzunova V, Napier R, Becer CR and Heise A. *Biomacromolecules* vol. 18, (6) 1928-1936.

Silica/methacrylate class II hybrid: telomerisation vs. RAFT polymerisation.

Maçon ALB, Kasuga T, Remzi Becer C and Jones JR. *Polym. Chem.* vol. 8, (23) 3603-3611.

2016

Glyconanoparticles with controlled morphologies and their interactions with a dendritic cell lectin.

Yilmaz G, Messenger L, Gleinich AS, Mitchell DA, Battaglia G and Becer CR. *Polymer Chemistry* vol. 7, (41) 6293-6296.

Poly(thioacrylate)s: Expanding the monomer toolbox of functional polymers.

Aksakal S and Remzi Becer C. *Polymer Chemistry* vol. 7, (45) 7011-7018.

Poly(methacrylic acid)-Coated Gold Nanoparticles: Functional Platforms for Theranostic Applications.

Yilmaz G, Demir B, Timur S and Becer CR. *Biomacromolecules* vol. 17, (9) 2901-2911.

SET-LRP of acrylates catalyzed by a 1 penny copper coin.

Aksakal R, Resmini M and Becer CR. *Polymer Chemistry* vol. 7, (43) 6564-6569. *Royal Society of Chemistry*.

Direct polymerization of levulinic acid via Ugi multicomponent reaction.

Hartweg M and Becer CR. *Green Chemistry* vol. 18, (11) 3272-3277.

Pentablock star shaped polymers in less than 90 minutes via aqueous SET-LRP.

Aksakal R, Resmini M and Becer CR. *Polymer Chemistry* vol. 7, (1) 171-175.

Utilising alternative modifications of α -olefin end groups to synthesise amphiphilic block copolymers.

Malins EL, Waterson C and Becer CR. *Rsc Advances* vol. 6, (75) 71773-71780.

2015

Synthesis of Glycopolymers and Recent Developments.

Yilmaz G and Remzi Becer C. *Carbohydrate Nanotechnology* 137-173.

Disposable MMP-9 sensor based on the degradation of peptide cross-linked hydrogel films using electrochemical impedance spectroscopy.

Biela A, Watkinson M, Meier UC, Baker D, Giovannoni G, Becer CR and Krause S. *Biosensors and Bioelectronics* vol. 68, 660-667.

Nitroxide-mediated copolymerization of styrene and pentafluorostyrene initiated by polymeric linoleic acid.

Alli A, Alli S, Becer CR and Hazer B. *European Journal of Lipid Science and Technology*.

Supramolecular glycopolymers with thermo-responsive self-assembly and lectin binding.

Cakir N, Hizal G and Becer CR. *Polymer Chemistry* vol. 6, 6623-6631.

Precise insertion of clickable monomer along polymer backbone by dynamic temperature controlled radical polymerization.

Malins EL, Amabilino S, Yilmaz G, Isikgor FH, Gridley BM and Becer CR. *European Polymer Journal* vol. 62, 347-351.

Lignocellulosic biomass: a sustainable platform for the production of bio-based chemicals and polymers.

Isikgor FH and Becer CR. *Polymer Chemistry* vol. 6, 4497-4559.

Glyconanoparticles and their interactions with lectins.

Yilmaz G and Becer CR. *Polymer Chemistry* vol. 6, 5503-5514.

2014

Dendritic cell lectin-targeting sentinel-like unimolecular glycoconjugates to release an anti-HIV drug.

Zhang Q, Su L, Collins J, Chen G, Wallis R, Mitchell DA, Haddleton DM and Becer CR. *Journal of The American Chemical Society* vol. 136, (11) 4325-4332.

A new proton sponge polymer synthesized by RAFT polymerization for intracellular delivery of biotherapeutics.

Kurtulus I, Yilmaz G, Ucuncu M, Emrullahoglu M, Becer CR and Bulmus V. *Polymer Chemistry* vol. 5, (5) 1593-1604.

Absolut copper catalyzed; Robust living polymerization of NIPAM: Guinness is good for SET-LRP.

Waldron C, Zhang Q, Li Z, Nikolaou V, Nurumbetov G, Godfrey J, McHale R, Yilmaz G, Randev RK, Girault M, McEwan K, Haddleton DM, Droebeke M, Haddleton AJ, Wilson P, Simula A, Collins J, Lloyd DJ, Burns JA, Summers C, Houben C, Anastasaki A, Li M, Becer CR, Kiviahio JK and Risangud N. *Polymer Chemistry* vol. 5, (1) 57-61.

Thermoresponsive hyperbranched glycopolymers: Synthesis, characterization and lectin interaction studies.
Vandewalle S, Wallyn S, Chattopadhyay S, Becer CR and Du Prez F. *European Polymer Journal* vol. 69, 490-498.

One-pot synthesis of poly(linoleic acid)-g-poly(styrene)-g-poly(ϵ -caprolactone) graft copolymers.
Alli A, Alli S, Becer CR and Hazer B. *Jaocs, Journal of The American Oil Chemists Society* vol. 91, 849-858.

Sequence-controlled multi-block glycopolymers via Cu(0) mediated living radical polymerization.
Zhang Q, Collins J, Anastasaki A, Wallis R, Mitchell DA, Becer CR, Wilson P and Haddleton DM. *Acs Symposium Series* vol. 1170, 327-348.

2013

Precision glycopolymers and their interactions with lectins.
Yilmaz G and Becer CR. *European Polymer Journal* vol. 49, (10) 3046-3051.

Synthetic glycopolypeptides as potential inhibitory agents for dendritic cells and HIV-1 trafficking.
Huang J, Zhang Q, Li GZ, Haddleton DM, Wallis R, Mitchell D, Heise A and Remzi Becer C. *Macromolecular Rapid Communications* vol. 34, (19) 1542-1546.

Non-amide kinetic hydrate inhibitors: Performance of a series of polymers of isopropenyloxazoline on structure II gas hydrates.
Reyes FT, Malins EL, Becer CR and Kelland MA. *Energy and Fuels* vol. 27, (6) 3154-3160.

A detailed study on understanding glycopolymer library and Con A interactions.
Gou Y, Geng J, Richards SJ, Burns J, Remzi Becer C and Haddleton DM. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 51, (12) 2588-2597.

Sequence-controlled multi-block glycopolymers to inhibit DC-SIGN-gp120 binding.
Zhang Q, Collins J, Anastasaki A, Wallis R, Mitchell DA, Becer CR and Haddleton DM. *Angewandte Chemie - International Edition* vol. 52, (16) 4435-4439.

Precision glycopolymers and their interactions with lectins.
Yilmaz G and Becer CR. *European Polymer Journal*.

Synthetic Glycopolypeptides as Potential Inhibitory Agents for Dendritic Cells and HIV-1 Trafficking.
Huang J, Zhang Q, Li G-Z, Haddleton DM, Wallis R, Mitchell D, Heise A and Becer CR. *Macromolecular Rapid Communications*.

Glycopolymers via Post-Polymerization Modification Techniques.
Burns JA, Gibson MI and Becer CR.

2012

Thermo-induced self-assembly of responsive poly(DMAEMA-b-DEGMA) block copolymers into multi- and unilamellar vesicles.
Pietsch C, Mansfeld U, Guerrero-Sanchez C, Hoepfner S, Vollrath A, Wagner M, Hoogenboom R, Saubern S, Thang SH, Becer CR, Chiefari J and Schubert US. *Macromolecules* vol. 45, (23) 9292-9302.

Block copolymers of poly(2-oxazoline)s and poly(meth)acrylates: A crossover between cationic ring-opening polymerization (CROP) and reversible addition-fragmentation chain transfer (RAFT).
Krieg A, Weber C, Hoogenboom R, Becer CR and Schubert US. *Acs Macro Letters* vol. 1, (6) 776-779.

Investigations on the combination of cationic ring opening polymerization and single electron transfer living radical polymerization to synthesize 2-ethyl-2-oxazoline block copolymers.
Young RA, Malins EL and Becer CR. *Australian Journal of Chemistry* vol. 65, (8) 1132-1138.

Uptake of well-defined, highly glycosylated, pentafluorostyrene-based polymers and nanoparticles by human hepatocellular carcinoma cells.
Babiuch K, Pretzel D, Tolstik T, Vollrath A, Stanca S, Foertsch F, Becer CR, Gottschaldt M, Biskup C and Schubert US. *Macromolecular Bioscience* vol. 12, (9) 1190-1199.

Cyclodextrin-centred star polymers synthesized via a combination of thiol-ene click and ring opening polymerization.

Zhang Q, Li GZ, Becer CR and Haddleton DM. *Chemical Communications* vol. 48, (65) 8063-8065.

Controlled alternate layer-by-layer assembly of lectins and glycopolymers using QCM-D.

Gou Y, Slavin S, Geng J, Voorhaar L, Haddleton DM and Becer CR. *Acs Macro Letters* vol. 1, (1) 180-183.

The glycopolymer code: Synthesis of glycopolymers and multivalent carbohydrate-lectin interactions.

Becer CR. *Macromolecular Rapid Communications* vol. 33, (9) 742-752.

2-Isopropenyl-2-oxazoline: A versatile monomer for functionalization of polymers obtained via RAFT.

Weber C, Neuwirth T, Kempe K, Ozkahraman B, Tamahkar E, Mert H, Becer CR and Schubert US. *Macromolecules* vol. 45, (1) 20-27.

Clicking on/with polymers: A rapidly expanding field for the straightforward preparation of novel macromolecular architectures.

Kempe K, Krieg A, Becer CR and Schubert US. *Chemical Society Reviews* vol. 41, (1) 176-191.

Adsorption behaviour of sulfur containing polymers to gold surfaces using QCM-D.

Slavin S, Soeriyadi AH, Voorhaar L, Whittaker MR, Becer CR, Boyer C, Davis TP and Haddleton DM. *Soft Matter* vol. 8, (1) 118-128.

Synthesis and SEC characterization of poly(methyl methacrylate) star polymers.

Burns JA, Haddleton DM and Becer CR. *Acs Symposium Series* vol. 1101, 81-98.

2011

Thermal properties of oligo(2-ethyl-2-oxazoline) containing comb and graft copolymers and their aqueous solutions.

Weber C, Krieg A, Paulus RM, Lambermont-Thijs HML, Becer CR, Hoogenboom R and Schubert US. *Macromolecular Symposia* vol. 308, (1) 17-24.

Microwave-assisted polymerizations: Recent status and future perspectives.

Kempe K, Becer CR and Schubert US. *Macromolecules* vol. 44, (15) 5825-5842.

Cu(0) mediated polymerization in toluene using online rapid GPC monitoring.

Levere ME, Willoughby I, O'Donohue S, Wright PM, Grice AJ, Fidge C, Remzi Becer C and Haddleton DM. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 49, (8) 1753-1763.

Adhesion of Preosteoblasts and Fibroblasts onto Poly(pentafluorostyrene)-Based Glycopolymeric Films and their Biocompatibility.

Babiuch K, Becer CR, Gottschaldt M, Delaney JT, Weisser J, Beer B, Wyrwa R, Schnabelrauch M and Schubert US. *Macromolecular Bioscience* vol. 11, (4) 535-548.

Synthesis and modification of thermoresponsive poly(oligo(ethylene glycol) methacrylate) via catalytic chain transfer polymerization and thiol-ene michael addition.

Soeriyadi AH, Li GZ, Slavin S, Jones MW, Amos CM, Becer CR, Whittaker MR, Haddleton DM, Boyer C and Davis TP. *Polymer Chemistry* vol. 2, (4) 815-822.

Synthesis of glycopolymers via click reactions.

Slavin S, Burns J, Haddleton DM and Becer CR. *European Polymer Journal* vol. 47, (4) 435-446.

Functionalized, biocompatible coating for superparamagnetic nanoparticles by controlled polymerization of a thioglycosidic monomer.

Babiuch K, Wyrwa R, Wagner K, Seemann T, Hoepfner S, Becer CR, Linke R, Gottschaldt M, Weisser J, Schnabelrauch M and Schubert US. *Biomacromolecules* vol. 12, (3) 681-691.

Optimised 'click' synthesis of glycopolymers with mono/di- and trisaccharides.

Vinson N, Gou Y, Becer CR, Haddleton DM and Gibson MI. *Polymer Chemistry* vol. 2, (1) 107-113.

2010

Dual hydrophilic polymers based on (meth)acrylic acid and poly(ethylene glycol) - Synthesis and water uptake behavior.

Krieg A, Pietsch C, Baumgaertel A, Hager MD, Becer CR and Schubert US. *Polymer Chemistry* vol. 1, (10) 1669-1676.

Clickable initiators, monomers and polymers in controlled radical polymerizations - A prospective combination in polymer science.

Mansfeld U, Pietsch C, Hoogenboom R, Becer CR and Schubert US. *Polymer Chemistry* vol. 1, (10) 1560-1598.

High-affinity glycopolymer binding to human DC-SIGN and disruption of DC-SIGN interactions with HIV envelope glycoprotein.

Becer CR, Gibson MI, Geng J, Ilyas R, Wallis R, Mitchell DA and Haddleton DM. *Journal of The American Chemical Society* vol. 132, (43) 15130-15132.

Block length determination of the block copolymer mPEG-b-PS using MALDI-TOF MS/MS.

Crecelius AC, Becer CR, Knop K and Schubert US. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 48, (20) 4375-4384.

Parallel optimization and high-throughput preparation of well-defined copolymer libraries using controlled/living polymerization methods.

Becer CR and Schubert US. *Advances in Polymer Science* vol. 225, (1) 17-62.

Investigation into thiol-(meth)acrylate Michael addition reactions using amine and phosphine catalysts.

Li GZ, Randev RK, Soeriyadi AH, Rees G, Boyer C, Tong Z, Davis TP, Becer CR and Haddleton DM. *Polymer Chemistry* vol. 1, (8) 1196-1204.

High fidelity vinyl terminated polymers by combining RAFT and cobalt catalytic chain transfer (CCT) polymerization methods.

Soeriyadi AH, Boyer C, Burns J, Becer CR, Whittaker MR, Haddleton DM and Davis TP. *Chemical Communications* vol. 46, (34) 6338-6340.

Self-healing and self-mendable polymers.

Syrett JA, Becer CR and Haddleton DM. *Polymer Chemistry* vol. 1, (7) 978-987.

Assessment of SET-LRP in DMSO using online monitoring and Rapid GPC.

Levere ME, Willoughby I, O'Donohue S, De Cuendias A, Grice AJ, Fidge C, Becer CR and Haddleton DM. *Polymer Chemistry* vol. 1, (7) 1086-1094.

Solubility and thermoresponsiveness of PMMA in alcohol-water solvent mixtures.

Hoogenboom R, Becer CR, Guerrero-Sanchez C, Hoeppener S and Schubert US. *Australian Journal of Chemistry* vol. 63, (8) 1173-1178.

RAFT polymerization meets coordination chemistry: Synthesis of a polymer-based iridium(III) emitter.

Ulbricht C, Becer CR, Winter A and Schubert US. *Macromolecular Rapid Communications* vol. 31, (9-10) 827-833.

Metal-free synthesis of responsive polymers: Cloud point tuning by controlled click reaction.

Becer CR, Kokado K, Weber C, Can A, Chujo Y and Schubert US. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 48, (6) 1278-1286.

Dual responsive methacrylic acid and oligo(2-ethyl-2-oxazoline) containing graft copolymers.

Weber C, Remzi Becer C, Guenther W, Hoogenboom R and Schubert US. *Macromolecules* vol. 43, (1) 160-167.

2009

Self-assembly of double hydrophobic block copolymers in water-ethanol mixtures: From micelles to thermoresponsive micellar gels.

Hoogenboom R, Rogers S, Can A, Becer CR, Guerrero-Sanchez C, Wouters D, Hoeppener S and Schubert US. *Chemical Communications* (37) 5582-5584.

Click chemistry beyond metal-catalyzed cycloaddition.

Remzi Becer C, Hoogenboom R and Schubert US. *Angewandte Chemie - International Edition* vol. 48, (27) 4900-4908.

Synthetic polymeric nanoparticles by nanoprecipitation.

Hornig S, Heinze T, Becer CR and Schubert US. *Journal of Materials Chemistry* vol. 19, (23) 3838-3840.

Lower critical solution temperature behavior of comb and graft shaped poly[oligo(2-ethyl-2-oxazoline)methacrylate]s.

Weber C, Becer CR, Hoogenboom R and Schubert US. *Macromolecules* vol. 42, (8) 2965-2971.

Clicking pentafluorostyrene copolymers: Synthesis, nanoprecipitation, and glycosylation.

Becer CR, Babiuch K, Pilz D, Hornig S, Heinze T, Gottschaldt M and Schubert US. *Macromolecules* vol. 42, (7) 2387-2394.

High temperature initiator-free RAFT polymerization of methyl methacrylate in a microwave reactor.

Paulus RM, Becer CR, Hoogenboom R and Schubert US. *Australian Journal of Chemistry* vol. 62, (3) 254-259.

Simplifying the free-radical polymerization of styrene: Microwave-assisted high-temperature auto polymerizations.

Erdmenger T, Becer CR, Hoogenboom R and Schubert US. *Australian Journal of Chemistry* vol. 62, (1) 58-63.

Tailor made side-chain functionalized macromolecules by combination of controlled radical polymerization and click chemistry.

Krieg A, Becer CR, Hoogenboom R and Schubert US. *Macromolecular Symposia* vol. 275-276, (1) 73-81.

Preparation of methacrylate end-functionalized poly(2-ethyl-2-oxazoline) macromonomers.

Weber C, Becer CR, Baumgaertel A, Hoogenboom R and Schubert US. *Designed Monomers and Polymers* vol. 12, 149-165.

2008

Copolymers containing phosphorescent iridium(III) complexes obtained by free and controlled radical polymerization techniques.

Ullbricht C, Becer CR, Winter A, Veldman D and Schubert US. *Macromolecular Rapid Communications* vol. 29, (24) 1919-1925.

Libraries of methacrylic acid and oligo(ethylene glycol) methacrylate copolymers with LCST behavior.

Becer CR, Hahn S, Fijten MWM, Thijs HML, Hoogenboom R and Schubert US. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 46, (21) 7138-7147.

Protocol for automated kinetic investigation/optimization of the RAFT polymerization of various monomers.

Becer CR, Groth AM, Hoogenboom R, Paulus RM and Schubert US. *Qsar and Combinatorial Science* vol. 27, (8) 977-983.

MALDI-TOF MS coupled with collision-induced dissociation (CID) measurements of poly(methyl methacrylate).

Baumgaertel A, Becer CR, Gottschaldt M and Schubert US. *Macromolecular Rapid Communications* vol. 29, (15) 1309-1315.

Libraries of statistical hydroxypropyl acrylate containing copolymers with LCST properties prepared by NMP.

Eggenhuisen TM, Becer CR, Fijten MWM, Eckardt R, Hoogenboom R and Schubert US. *Macromolecules* vol. 41, (14) 5132-5140.

Synthesis of poly(2-ethyl-2-oxazoline)-b-poly(styrene) copolymers via a dual initiator route combining cationic ring-opening polymerization and atom transfer radical polymerization.

Becer CR, Paulus RM, Hppener S, Hoogenboom R, Fustin CA, Gohy JF and Schubert US. *Macromolecules* vol. 41, (14) 5210-5215.

Acetyl halide initiator screening for the cationic ring-opening polymerization of 2-ethyl-2-oxazoline.

Paulus RM, Becer CR, Hoogenboom R and Schubert US. *Macromolecular Chemistry and Physics* vol. 209, (8) 794-800.

2007

Water uptake of hydrophilic polymers determined by a thermal gravimetric analyzer with a controlled humidity chamber.

Thijs HML, Becer CR, Guerrero-Sanchez C, Fournier D, Hoogenboom R and Schubert US. *Journal of Materials Chemistry* vol. 17, (46) 4864-4871.

Cu(II)-mediated ATRP of MMA by using a novel tetradentate amine ligand with oligo(ethylene glycol) pendant groups.

Becer CR, Hoogenboom R, Fournier D and Schubert US. *Macromolecular Rapid Communications* vol. 28, (10) 1161-1166.

Scale-up of microwave-assisted polymerizations in continuous-flow mode: Cationic ring-opening polymerization of 2-ethyl-2-oxazoline.

Paulus RM, Erdmenger T, Becer CR, Hoogenboom R and Schubert US. *Macromolecular Rapid Communications* vol. 28, (4) 484-491.

Patterned polymer brushes grafted from bromine-functionalized, chemically active surface templates.

Becer CR, Haensch C, Hoeppener S and Schubert US. *Small* vol. 3, (2) 220-225.

2006

Optimization of the nitroxide-mediated radical polymerization conditions for styrene and tert-butyl acrylate in an automated parallel synthesizer.

Remzi Becer C, Paulus RM, Hoogenboom R and Schubert US. *Journal of Polymer Science, Part a: Polymer Chemistry* vol. 44, (21) 6202-6213.