CLAIMS

1. A process of producing methyl methacrylate or derivatives thereof comprising the steps of;
(i) converting 2-butanone to methyl propionate using a Baeyer-Villiger monooxygenase, and
(ii) treating the methyl propionate produced to obtain methyl methacrylate or derivatives thereof, wherein the Baeyer-Villiger monooxygenase is a type I Baeyer-Villiger monooxygenase selected from one of the following enzyme groups: a cyclohexanone monooxygenase (CHMO) EC number 1.14.13.22; a 4-hydroxyacetophenone monooxygenase (HAPMO) EC number 1.14.13.84; a cyclopentadecanone monooxygenase (CPDMO).

2. A process according to claim 1, wherein a cyclohexanone monooxygenase (CHHMO) is GenBank: BAA86293.1; a 4-hydroxyacetophenone monooxygenase (HAPMO) is GenBank: AAK54073.1 and a cyclopentadecanone monooxygenase is GenBank: BAE93346.1.

3. A process according to claim 1 or 2, wherein the methyl propionate is treated to produce methyl methacrylate or methacrylic acid by reaction with formaldehyde or a suitable source thereof in the presence of a suitable catalyst.

4. A process according to claim 1 or 3, wherein the Baeyer-Villiger monooxygenase is a cyclohexanone monoxygenase, a 4-hydroxyacetophenone monooxygenase, or a cyclopentadecanone monooxygenase, selected from one of the following enzymes: cyclohexanone monooxygenase from *Acinetobacter calcoaceticus* NCIMB 9871, cyclohexanone monooxygenases from *Xanthobacter flavus*, cyclohexanone monooxygenases from *Rhodococcus* sp. HI-31, cyclohexanone monoxygenase from Brachymonas petroleovorans, 4-hydroxyacetophenone monooxygenase or cyclopentadecanone monooxygenase.

5. A process according to claim 4, wherein cyclohexanone monooxygenases from *Xanthobacter flavus* is GenBank: CAD10801.1; cyclohexanone monooxygenases from *Rhodococcus* sp. HI-31 is GenBank: BAH56677.1; cyclohexanone monooxygenase from Brachymonas petroleovorans is GenBank: AAR99068.1; 4-hydroxyacetophenone monooxygenase is Q93TJ5.1 and cyclopentadecanone monooxygenase is GenBank: BAE93346.1.

6. A process according to any of claims 1 or 3, wherein the Baeyer-Villiger monooxygenase is a cyclohexanone monoxygenase, selected from: cyclohexanone monooxygenase from *Acinetobacter calcoaceticus* NCIMB 9871, cyclohexanone monooxygenases from *Xanthobacter flavus*, cyclohexanone monooxygenases from *Rhodococcus* sp. HI-31, or cyclohexanone monoxygenase from Brachymonas petroleovorans.

7. A process according to claim 6, wherein cyclohexanone monooxygenases from *Xanthobacter flavus* is GenBank: CAD10801.1; cyclohexanone monooxygenases from *Rhodococcus* sp. HI-31 is GenBank: BAH56677.1 and cyclohexanone monooxygenase from Brachymonas petroleovorans is GenBank: AAR99068.1.

8. A process according to claim 1 or 3 wherein the Baeyer-Villiger monooxygenase is a cyclohexanone monooxygenase.

9. A process according to claim 1 or 3, wherein the Baeyer-Villiger monooxygenase is cyclohexanone monooxygenase deriving from *Acinetobacter calcoaceticus* NCIMB 9871, *Xanthobacter flavus* or *Rhodococcus* sp. HI-31 .

10. A process according to claim 9, wherein *Xanthobacter flavus* is GenBank: CAD10801.1 and *Rhodococcus* sp. HI-31 is GenBank: BAH56677.1.

11. A process according to claim 1 or 3, wherein the Baeyer-Villiger monooxygenase is a 4-hydroxyacetophenone monooxygenase deriving from *Pseudomonas flourescans.*

12. A process according to claim 1 or 3, wherein the Baeyer-Villiger monooxygenase is a cyclopentadecanone monooxygenase deriving from *Pseudomonas sp. HI-70.*

13. A process according to any preceding claim, wherein at least one co-solvent is included in the reaction mixture of the above process, wherein the co-solvent is selected from one of the following: methanol, 2-butanol, tert-butanol, dioxane, acetone or acetonitrile.

14. A process according to claim 13, wherein the co-solvent used is methanol.

15. A process according to claim 13 or 14, wherein the concentration of co-solvent/substrate is at 1000:1 or greater mol:mol of Baeyer-Villiger Monoxygenase.

16. A process according to any preceding claim, wherein the ratio of methyl propionate: ethyl acetate production by the Baeyer-Villiger Monoxygenase is at least 1:5.

17. A process according to any preceding claim, wherein the Baeyer Villiger monoxygenase converts 2-butanone to methyl propionate at an absolute level of at least 2% selectivity.

18. A process according to any preceding claim, wherein the Baeyer Villiger Monooxygenase converts 2-butanone to methyl propionate at a relative level of at least 20%.

19. A method of preparing polymers or copolymers of methyl methacrylate or derivatives thereof comprising the steps of:
(i) preparation of methyl methacrylate or derivatives thereof in accordance with the process of any one of claims 1 to 18;
(ii) polymerisation of the methyl methacrylate prepared in (i), optionally with one or more comonomers, to produce polymers or copolymers thereof.

20. A method according to claim 19, wherein the comonomers are monoethylenically unsaturated carboxylic acids and dicarboxylic acids and their derivatives, including esters, amides and anhydrides.

21. A method according to claims 19 or 20, wherein the comonomers are selected from: acrylic acid, methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate, iso-butyl acrylate, t-butyl acrylate, 2-ethylhexyl acrylate, hydroxyethyl acrylate, iso-bornyl acrylate, methacrylic acid, methyl methacrylate, ethyl methacrylate, propyl methacrylate, n-butyl methacrylate, iso-butyl methacrylate, t-butyl methacrylate, 2-ethylhexyl methacrylate, hydroxyethyl methacrylate, lauryl methacrylate, glycidyl methacrylate, hydroxypropyl methacrylate, iso-bornyl methacrylate, dimethylaminoethyl methacrylate, tripropyleneglycol diacrylate, styrene, α-methyl styrene, vinyl acetate, isocyanates including toluene diisocyanate and p,p'-methylene diphenyl diisocyanate, acrylonitrile, butadiene, butadiene and styrene (MBS) and ABS subject to any of the above comonomers not being the momomer selected from methacrylic acid or a methacrylic acid ester in (i) or (ii) above in any given copolymerisation of the said acid monomer in (i) or a said ester monomer in (ii) with one or more of the comonomers.